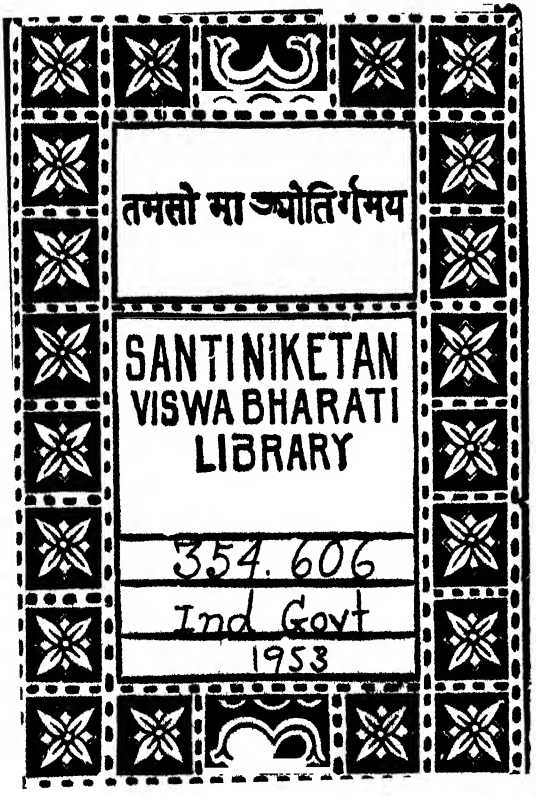
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ANNUAL REPORT

1953

DIRECTORATE GENERAL OF HEALTH SERVICES

MINISTRY OF HEALTH, NEW DELHI.

ANNUAL REPORT

of the

DIRECTORATE GENERAL OF HEALTH SERVICES 1953

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APPENDICES

ANNUAL REPORT

for the year 1953

Introduction—a brief review

The Annual Report for the year 1953 opens with the Chapter on Population and Vital Statistics.

The birth rate for 1953 is slightly less than that of the preceeding two years. The death rate is the same as in 1951, but slightly higher than in 1952. The infant mortality rate though lower than that in 1951 is slightly higher than in 1952. The actual birth and death rates during 1941—1950 were estimated as 39:9 and 27·4 respectively as against those of 1953, which registered 24·8 and 14·4 per mille. The significant fall in the infant mortality rate is also indicative of improving environmental sanitation and general health conditions, though, it still continues at a high level. The age distribution of deaths indicates that over 55 per cent. of deaths in children under 15 years is in the age group of 0-5 years and 22·4 per cent. among infants. This high percentage in the 0-5 age group indicates the need for laying greater emphasis on provision of health services to children under 5 years. The maternity and child health programmes under the First Five Year Plan are aimed at improvement of maternal care and care of the new born, but future schemes will have to concentrate on child care programmes.

The maternal mortality rate shows a decline in urban areas, which may be attributed to improved provision of ante-natal care and rapid expansion of midwifery services. In large cities with Municipal Corporations the rate has dropped from 20 per thousand live births in 1939 to 2 per thousand live births in 1953. With the reproductive age group of 15 to 44 years forming 45 per cent. of the population of India, it would require a constant vigil to keep and maintain the maternal mortality rate low.

To improve the methods of collection of statistics and to train personnel, the Central Government has in view to set up a Vital and Health Statistics Demonstration Centre in any one big Municipality. Such a centre is likely to be established in 1954.

There is a steady improvement in nursing services. Training schools have been stepped up to 100 with qualified Sister Tutors appointed. A nursing education project with W. H. O. assistance was started at J. J. Hospital, Bombay and a paediatric nursing project at the Lady Hardinge Medical College Hospital, New Delhi, with assistance from the Colombo Plan. UNICEF made a valuable gift of teaching equipment for the training of nurses. The Indian Nursing Council has approved of a simple and shorter course in nursing and midwifery for the training of auxiliary nurses and midwives to meet the demands for nursing personnel in the country. Some of the States had reported the

unavailability of nurses, but the lack of them compared to the number of sanctioned posts was not much. There is still a general complaint of inadequate provision of residential accommodation and amenities to nurses.

The progress made in public health activities and administration is reflected in the continuous and gradual decline in the incidence of such diseases as smallpox and plague, which, at one time were responsible for a great many deaths. The total disappearance of plague in most States and almost complete elimination of cholera in other States, justifies the optimism, that complete eradication of these diseases is not impossible, though, the abrupt interruption here and there of the general declining tendency is a warning that the situation calls for continued vigilance.

In the group of fevers, malaria is the most important. The anti-malaria campaign started by certain States has been showing encouraging results and with the launching of the National Malaria Control Programme this year, a real beginning in the control of this disease has commenced.

Tuberculosis is the greatest single cause of mortality next to malaria. Of all the anti-tuberculosis schemes taken by the Central Government, the B. C. G. Vaccination campaign is given the highest priority. The number of States accepting the scheme has increased to 21, with others soon to join. UNICEF provided supplies and equipment worth Rs. 7,00,000/-. B. C. G. Vaccine was manufactured at the B. C. G. Vaccine Laboratory, Guindy and supplied to field centres in India, Burma, Ceylon, Malaya and Singapore. More tuberculosis clinics were opened, the bed strength increased and after-care colonies for rehabilitation of *ex*-tuberculosis patients established.

Diarrhoeas and Dysenteries and the Enteric group of fevers continue to be as prevalent as before. The beginning of the National Water Supply and Drainage Programme designed for the provision of safe water supply is an important step in controlling this group.

Measures for improvement of nutrition of the vulnerable groups, such as, young children, expectant and nursing mothers are mile-stones in public health programmes of all State Governments. Considerable progress has been made in diet and nutrition surveys, the institution of ameliorative measures and in nutrition publicity, in the various States. Analysis indicate that the diet in general, is lacking in foods of high biological values, such as, milk, meat, fish, eggs and also fresh vegetables and fruit which supply the essential vitamins and minerals. Apart from revealing the nature of diet consumed, results of diet surveys provide valuable information on dietary habits of the people and the factors, if any, which influence them. The most common nutritional deficiencies observed in children were those of vitamins 'A' and 'B'. Goitre was prevalent in Punjab. A very high incidence of intestinal parasitic infestation was observed in Mysore State. The distribution of milk supplied by UNICEF at the Maternity & Child Health Centres to Nursing and expectant mothers & children; the mid-day meal scheme for school children and the issue of vitamin tablets, Codliver oil and like suplements, were some at the ameliorative measures conducted in the States of Bihar, Bombay, Hyderabad, Madhya Pradesh, Madras, Mysore, Punjab, Uttar Pradesh and West Bengal.

Figures for Venereal Diseases are those obtained from the records of hospitals and dispensaries. One team at Kulu (Punjab) continued its mass treatment. Specialists are appointed at the major Government Hospitals by the States and subclinics opened at dispensaries. A Mobile Veneral Diseases Control Team continued to tour Jaunsar-Bewar area, Uttar Pradesh, conducting general survey and carrying out mass treatment.

Leprosy presents a major health problem in the States of Andhra, Bihar, Bombay, Madras and Madhya Pradesh where the disease is endemic and the incidence high. Over 90,000 cases were estimated in Bombay State alone. Madhya Pradesh has the highest incidence ranging from 0·38 to 1·04 per cent. in most areas reaching as high as 2 per cent. of the population. In the States of Hyderabad, Travancore-Cochin, Orissa (coastal region), Punjab (Kangra district) and West Bengal (region west of Bhagirathi) the incidence is also high. The Hind Kusht Nivaran Sangh and the Gandhi Memorial Leprosy Foundation together with other voluntary organisations are continuing their good work in the cause of leprosy. In addition to teaching and routine clinical work, the Leprosy Department of the Tropical School of Medicine, Calcutta, has been the centre for research activities of the Sangh. The Gandhi Memorial Leprosy Foundation has a scheme for the starting of Leprosy Control Units and Clinics, while the Central Leprosy Teaching and Research Institute, Chingleput and the Scheiffelin Leprosy Research Sanatorium at Karigiry (Vellore) are working on early detection and control of leprosy. The Mission to Lepers opened its Wellesley Bailey Children's Sanatorium at Zamurradganj during the year.

Provision for treatment of eye disease and blindness is made at all State Hospitals and eye clinics. Eye Relief Camps are periodically held by the States of Bombay, Madhya Pradesh, Himachal Pradesh, Bhopal, PEPSU and Mysore. A Mobile Opthalmic Unit operates in the Southern Division of Bombay State. Likewise, the Association for the prevention of Blindness in Bengal extends its services to remote villages through its travelling eye dispensaries, subsidised by the State. The State Council of Blindness, Hyderabad, maintains its preventive and curative work and after-care welfare of the blind of the State. Due to its geo-climatic conditions, the State of Rajasthan has a high incidence of trachoma, glaucoma and cataract formation.

An important advance towards the control over manufacture and sale of drugs was the enforcement of the provisions of the Drugs Act in Part C States and in Travancore-Cochin.

The International Sanitary Conventions were replaced by the International Sanitary Regulations adopted by World Health Assembly in May 1952 and came into force in respect of India with effect from 2nd March 1953 with certain reservations. Their adoption necessitated the revision of the Indian Port Health and the Indian Aircraft (PH) Rules to bring them in conformity with the Regulations.

Sanitation of the Ports and Airports was satisfactory with the Stegomyia Index maintained well below 1·0 per cent. Port Health Committees were reconstituted and their scope and functions enlarged. Seamen's Clinics at Bombay and Calcutta continued to provide medical

facilities to seamen, while the Seamen's Medical Examination Organisations at all major ports examined seamen to eliminate unfit seamen from going on voyages abroad.

Medical Relief falls under two heads-rural and urban. Two-thirds of the 9,600 hospitals and dispensaries are situated in rural areas. The total bed-strength rose to over 1,26,000, that is, an increase by a thousand beds since 1952. This gives an overall ratio of one bed per 3,600 persons. The total expenditure incurred by the State Governments on Medical Relief is slightly over Rs. 21/- crores or a *per capita* expenditure of nine annas (56 nP.) per annum. Though efforts continue to be made to improve the quality and amount of medical facilities, the general standard remains below par, due mainly to lack of equipment and trained personnel, with evident overcrowding and an unusually heavy load of work. Specialist services are not generally available even at district headquarter hospitals. X-ray and laboratory facilities except in the larger hospitals were on the whole, below reqirements. While medical relief in urban areas is provided largely by the State Governments directly, the responsibility for this in rural areas rests mainly with the local authorities. The improvements effected by local bodies despite grants being made to them, are of a limited nature as medical personnel are averse to settling in rural areas, with the consequence that many existing dispensaries had to be closed down. This in turn led to some of them being converted into Ayurvedic and Unani dispensaries. Barring one or two States. there is general concern about making conditions suitable for attracting qualified medical officers to rural areas. The use of medicine chests in remote villages has come into vogue on a fairly large scale and mobile dispensary services started in many parts of the country. The Scheme for establishing Primary Health Centres in the Community Project Blocks has made little progress to date.

Medical education is developing with plans to open more colleges each year. There are at present 33 Medical Colleges, 23 run by State Governments and Municipalities and the rest by Universities, private organisations or societies. The total admission capacity of these institutions is 2,700 students per annum. There are still two medical schools training students for the licentiate diploma. Many colleges continued to provide training facilities at post-graduate level. The Government of India accepting the recommendations of the Upgrading Committee appointed in 1948, sanctioned the upgrading of the departments of anatomy, midwifery and gynaecology and venereology in Madras, the Indian Cancer Research Centre at Bombay, the Thoracic Surgery Unit of the Christian Medical College, Vellore and the Patel Chest Institute, Delhi. Selected teachers were sent abroad for specialised training in their respective subjects under Fellowship programmes, which were sponsored by the World Health Organisation, the Technical Co-operation Mission, the Colombo Plan and the Rockfeller Foundation.

The Medical Council of India took an active part in improving and regulating the standard of medical education, laying down standards for staffing and equipment required for Colleges. Of the 66,000 medical men and women on the registers 27,000 were graduates and 39,000 licentiates. Dental education is also taking its due place in the schemes. Six centres of training with courses leading to a University Degree in Dentistry are

available. The total number of students admitted each year is 164. Four of the six institutions are full-fledged and independent Dental Colleges, while the other two are departments in Medical Colleges. Dental Councils under the Dentist Act of 1948 have been formed in 13 States.

The Scientific Advisory Board of the Indian Council of Medical Research constituted advisory committees on cholera, malaria, nutrition, leprosy, plague, clinical research, maternity and child health, filariasis, industrial health, pharmacology, besides, bacteriology and haematology, tuberculosis, venereal diseases, liver diseases and evaluation of nutritional status, which met and submitted reports during the year. The Council also planned research in the fields of vitamins, hormones and schistosomiasis and on typhus. Experimental studies on lathyrism and pathological examination of human brain in malnutrition were engaged in Work on indigenous drugs at the Jammu and Kashmir Laboratory resulted in the identification of 50 important essential oil bearing plants and the recognition of certain problems of practical and theoritical significance regarding serpentina, ergot and the veratrum alkaloids. The occurrence of an epidemic of poliomyelitis in India in 1949 resulted in the setting up of the Polio Research Unit at Bombay and the Virus Research Centre at Poona, for the study of virus disease of man and domestic animals in 1953.

The Industrial Health Advisory Committee began to function for the first time this year. An enquiry into the effect of sewage treatment and excreta disposal methods with reference to intestinal parasites and the treatment and hygienic disposal of lac wastes were conducted at the All India Institute of Hygiene and Public Health, Calcutta, with good effect.

The Indian Cancer Research Centre, Bombay, added electron microscopy and spectrosocy to its activities.

The South-West Monsoon which accounts for 73 per cent of the total rain in the year was below normal in the Southern States of Hyderabad, Mysore, Travancore-Cochin and parts of the sub-Himalayan region of Bengal and in Deccan. Consequently, crops failed in the south, while heavy rains and floods affected the crops in Assam, West Bengal, Bihar and Rajasthan. Hailstorms in January damaged the rabi crop in Bihar, Punjab, Madhya Pradesh, Uttar Pradesh, Rajasthan and Himachal Pradesh. Sporadic cases due to insect pests and rust were reported from States of Bombay, Hyderabad and Mysore. Cattle fodder was also reduced and so cattle and milk production were affected. Attacks by pyrilla of sugarcane and of paddy by gundhi bugs were reported from the eastern region. Failure of winter season caused conditions of drought in unirrigated areas. The loss of damage to crops is estimated at 4,16,000 tons due to drought and 1,65,000 tons due to floods.

The Central and State Governments and voluntary organisations took speedy and effective measures to relieve the distress caused by floods, drought, cyclone and pests. Financial assistance, (Table I), provision of employment to agricultural labour and maintaining the state of health by establishment of gruel centres and distribution of skim milk, multivitamin tablets and clothing were some of the measures adopted. Precautions were taken against outbreak of epidemics and arrangements were made to treat cases immediately.

Medical care of displaced persons continued to be one of the responsibilities of the Governments. They were given medical care and attention at special centres and tuberculosis hospitals in the States of Bihar, Bombay, Punjab, West Bengal, Pepsu, Rajasthan, Saurashtra, Bhopal, Manipur, Tripura, Vindhya Pradesh and the Islands of the Andamans and Nicobars. In other States, treatment was given at the established hospitals and dispensaries.

To afford medical relief to Government officials of all grades, the Health Ministry has under consideration the implementation of a Contributory Health Scheme as a pilot project in elhi, where the majority of Government personnel is centered.

The architectural section of the Directorate confined its activities to the planning of actual schemes sponsored by the Central Government for the Delhi Area.

During the year, the World Health Organisation rendered assistance by way of technical experts, equipment and supplies at a total cost of U.S. $ 4,88,892 or Rs. 24,44,460. The Government of India's contribution to the World Health Organisation during the year was U.S. $ 2,73,055 or Rs. 13,65,275.

The United Nations' International Children Emergency Fund provided assistance in the form of equipment and supplies worth U.S. $ 24,04,400 or Rs. 1,20,22,000 towards maternal and child health programmes, yaws control, BCG Vaccination campaign, tuberculosis control, skimmed milk powder, dairy plant and relief and emergency supplies. The Government of India's contribution towards the Fund during the year under review was Rs. 15,00,000 or U.S. $ 3,00,000.

The Rockfeller Foundation offered fellowships, travel and equipment grants to medical and nursing personnel and training centres. The Foundation equipped the Virus Research Centre at Poona and met the salaries of the staff of the Foundation working at the Centre.

The Central Selection Committee constituted to draw up a panel of suitable names for the award of fellowships and scholarships offered by the many international and foreign agencies, nominated the following number for fellowships for the year under review:--

T.C.A. fellowship	28
Rockfeller Foundation	4
WHO fellowships	28
Colombo Plan fellowships	5

Chapter I

POPULATION AND VITAL STATISTICS

The last decennial census of population was taken on 1st March 1951. 3,569 lakhs of persons were enumerated as against 3,128 lakhs in 1941, in the Union of India excluding the State of Jammu and Kashmir and tribal areas of Assam, where no census operation could be conducted because of the peculiar conditions obtaining there. There was thus a net increase in population of 14.7 per cent during the decade 1941–50. There was on an average 312 persons for every square mile of area. India is almost as densely populated as Ceylon, Denmark, Hungary and Switzerland and less densely populated than Japan, Belgium, Netherlands and U.K. vide Table 2. Further, it may be pointed out that the density within the country varies greatly. Where there are 1,015 people per square mile in Travancore-Cochin and 806 per square mile in West Bengal, there are only 117 persons per square mile in Rajasthan, 102 per square mile in Himachal Pradesh including Bilaspur and only 34 per square mile in Kutch.

2,950 lakhs of people are reported to be living in rural areas of the country and only 619 lakhs i.e. 17.3 per cent in cities and towns. The percentage of urban population in different zones of the country are shown in the following table:–

Zone	Urban population as percentage of general population
1 North India	13·6
2 East India	11·1
3 South India	19·7
4 West India	31·2
5 Central India	15·8
6 North West India	21·4
7 India	17·3

Thus, the proportion of rural population is the highest in East India and the lowest in West India. The urban population of the country is spread over a few small and medium sized towns and a few large cities.

The 1951 Census returns showed that there were 73 towns with a population of one lakh people. The number of people dependant on agriculture was about 69.7 per cent of the population.

The population of India increased by 14·7 per cent during the decade 1941–50 and assuming the same net annual increase following the 1951 census, the population during 1953 is estimated to be 3666·4 lakhs. This method of estimation is adopted purely for its simplicity and no attempt is made to explain the rationale of the procedure. This is a convenient substitute for other methods of population estimation, particularly the method of natural increase. Population estimates are worked out by this

method for the country, for individual States and for towns with population of 30 thousand or over. After 1951 census, a peculiar position arose in case of certain towns of Punjab. The 1951 census population for these towns was less than the population in 1941 and thus registered a decrease. In case of these towns, the population estimates are worked out by adding the natural increase during the year to the population estimate for the previous year.

Registration of births and deaths is an important part of population statistics. If registration of vital events is complete and accurate, it can serve as a reliable source of information on changes in population during the period intervening between two decennial census counts.

The registration area of the country can be divided into four categories on the basis of available registration agency:—

(1) Municipal Health Authorities act as Registrars in urban areas and the reporting is done by their own staff. (2) The lowest police officials is the registrar in rural areas, the reporting being done by the village chaukidar or watchman. These two areas constitute the largest group. (3) Rural areas where registration is the responsibility of village panchayats. (4) Rural areas where registration is done by the village headman, and returns are submitted through the Tehsildar instead of the Civil Surgeon. Different States falling in each of the four categories are shown in Table 3, with the official channel through which information is submitted to the Government of India.

In the States of Madras, Coorg, Bombay, Madhya Pradesh, Punjab, Ajmer, Delhi, Uttar Pradesh, Bihar, Orissa, West Bengal, Assam (plains) and Mysore, the registration is, more or less, complete. The registration of births and deaths in the States of Manipur, Tripura, Saurashtra, Kutch, Madhya Bharat, Bhopal, Vindhya Pradesh, Rajasthan, Pepsu, Bilaspur, Jammu and Kashmir, is very deficient, and in the remaining States it is incomplete.

The present position regarding registration system in different States of India is summarised in Table 4.

It will be observed that the registration of births and deaths is compulsory for all urban areas except in Tripura State. The registration is compulsory in the rural areas of Bihar, Madras, Punjab, Uttar Pradesh, West Bengal, Andhra, Delhi, Himachal Pradesh, Madhya Bharat, Mysore, Travancore-Cochin and Pepsu States. In the rural areas of Bombay, Madhya Pradesh, Manipur and Bhopal, registration is voluntary. No registration arrangements exist in Rajasthan, Tripura and Vindhya Pradesh. The fact that registration is voluntary or compulsory does not have much effect on its completeness. There are States where registration is voluntary and the figures are more complete as compared with others where registration is not complete in spite of being compulsory. The reasons are not far to seek. The law governing registration, is not rigorously enforced and for all practical purpose, registration is virtually voluntary. No Act is uniformally applicable to all the States. We have central legislation in the form of Registration of Births, Deaths and Marriages Act of 1886, and some of the States have extended it to their areas. In most of the States, the provision is made under Local Self Government, Police Public Health or Revenue Acts.

In 1952 and 1953, the census authorities in some of the States, under instructions from the Registrar General of India, conducted a sample survey for the verification of census count. Simultaneously they undertook to verify the completeness of registration of births and deaths. In some cases, the results showed under-registration of births and deaths.

During the year under report, growing awareness on the part of the States was observed with regard to the importance of registration. West Bengal Government extended their Registration Act to Cooch Bihar; Pepsu State had a vital registration scheme under consideration. In Assam, a scheme was submitted to the Government for the Organization of Vital Statistics both in urban and rural areas. A post of Registrar for births and deaths was created and a law for compulsory registration enacted by the Government of Hyderabad, while the States of Rajasthan and Saurashtra were contemplating an enactment of their own or an extension of the Central Act of 1886 for their own States.

The registered birth rates in the different States are shown in Table 5.

As the completeness for registration varies from State to State no attempt is made to calculate an all India birth-rate relating the total registered birth to the total population. A multiplicity of factors goes to determine birth-rate in a community, notably the age structure of the population, the number of married women in the child bearing age, fertility-characteristic of the race, nutritional and general health status and the economic back-ground. It is not possible to compare registered birth rates in different States in order to determine the dominant factors influencing it in any particular areas because real differences are concealed by differences in the degree of under-registration. There is, however, a slight declining tendency in the registered birth rates in almost all the States and it does not lend itself to any easy interpretation.

Another important feature of birth-rate is a regular seasonal variation. In each State, birth rate shows a definite minimum and a definite maximum during the course of a year. Yet another aspect of birth statistics is the distribution of total births in the two sexes. Sex ratio, *i.e.*, the number of males per 100 females born is shown in table 5. It will be noticed that the sex ratio is the highest in Uttar Pradesh and lowest in Madras. In this connexion, an extract from the Census Commissioner's report (1951) will not be out of place. He says, "The occurrence of an excess of male births is not an accident, nor is the fact that this excess is much more pronounced in Uttar Pradesh than in the other States. It would seem that we are face to face with the working of some biological law. Is that conclusion valid or is it vitiated by the fact that all births do not get registered? We know there are omissions in the registration of births. It is also true that the extent of such omissions is not the same in all the States."

It cannot, therefore, be denied that it is difficult to be certain of the conclusion. The causes which lead to the omission of registration of births are not peculiar to female births. Female births are not much more likely to get omitted than male births. It is difficult to think of any kind of systematic bias which would lead to continuous and universal suppression of female births in such large numbers.

Death Rates.—Table 6 shows the registered death rates in different States of India. Very few cases are seen by qualified doctors before death, and hence medical certification of the real cause of death is an objective that is not likely to be realised for a long time. Under the circumstances, it is not possible to adopt an elaborate cause of death classification for tabulation of mortality data. Generally deaths are classified under three major infectious diseases *viz.* cholera, smallpox and plague, and the three groups of causes, namely, respiratory diseases, dysentery and diarrhoea, and fevers. All the rest are shown in one group. Some of the bigger municipal corporations have, however, compiled mortality statistics based on a fairly large number of causes. The specific death rate for various age groups during the year 1953 revealed that 24·9 per cent. deaths were among persons above the age of 50. Mortality Statistic is an index of demographic and general health conditions of a nation. Better the health status, higher will this percentage be. The following table shows the position of India as compared with other countries.

Percentage of Mortality for Age Group of 50 years & above for different countries, 1953

Country	*Percentage of Mortality*
1. Sweden	87·7
2. United Kingdom	86·2
3. New Zealand (excluding Maoris)	81·9
4. Australia	79·8
5. Canada	72·9
6. Israel	61·7
7. Japan	60·3
8. Argentina	55·6
9. Yugoslavia	49·9
10. British Guiana	42·4
11. Ceylon	33·0
12. Thailand	28·1
13. Federation of Malaya	28·0
14. India	24·9
15. Mexico	26·7
16. Egypt	19·6
17. Gautemala	19·4

Records of the past four years show that the infant mortality rate has decreased significantly in almost all parts of India (table 7). Infant mortality rate is regarded as the measure of general health conditions of the population. Needless to say, the available information with respect to different States is subject to varying degrees of under-registration and hence is not strictly comparable. Table 8 shows the comparative figures for other countries. A comparison, table 9, among the cause-specific infant mortality rates in three major towns of Bombay, Calcutta and Madras shows that fevers, dysentery and diarrhoea, and convulsions are gaining importance as causes of infant deaths while smallpox and measles are

on the decline. No such information is available on maternal mortality in the country. Table 10 details the maternal mortality rate worked out on the basis of registration returns in different States. To find out the part played by different ailments connected with pregnancy and child birth, registration of maternal deaths according to a detailed classification was introduced during the year in selected areas of different States. The information collected was found to be too fragmentary to admit of any valid inferences. A study of maternal deaths in the Bombay Municipal Corporation for 1953 revealed that 43.4, 26.2, 13.4 and 9.8 per cent. of maternal deaths were caused by haemorrhage, toxaemias, puerperal sepsis and embolism, respectively. Maternal mortality rates in different areas of the country were as follows:—

Health Unit	State on which the Unit is located	Maternal Mortality rate	No. of deaths	Infant mortality rate
Najafgarh	Delhi . . .	2·20	6	98·28
Sirur	Bombay . .	5·30	18	176·38
Singur	Bengal . . .	5·24	10	105·73

CHAPTER II

Chief Diseases

SMALLPOX

Smallpox is responsible for 0.74 per cent. of the total mortality, and has a large case incidence. The disease was present throughout the year in one or other of the States. March or April is usually the month of maximum incidence. The percentage of deaths due to smallpox state-wise in Andhra 0.65, Bihar 0.53, Bombay 0.32, Coorg 1.07, Delhi 0.77, Madhya Pradesh 0.33, Madras 0.44, Mysore 1.54, Orissa 0.69, Punjab 0.25, Vindhya Pradesh 1.93, West Bengal 0.19, Assam 0.46, Travancore-Cochin 0.83, Bhopal 0.52, Rajasthan 2.94. The majority of cases occur among infants and children and the question of complete primary vaccination is interlinked with the complete registration of births. So many of the newborns remain unregistered; and so remain unvaccinated.

Though the disease is notifiable in most States morbidity figures are not accurate. Mortality figure are, however, more trustworthy.

In Andhra the disease prevailed in a sporadic form in all the districts. In Assam there was no severe outbreak and only five districts were mildly affected. In Bihar all the districts showed sporadic incidence. In Bombay the disease was widespread in all districts. Incidence was particularly severe in five of them. In Madhya Pradesh though all districts reported infection, there was definite improvement in the overall situation since last year. In Uttar Pradesh incidence was sporadic. In West Bengal three districts were severely affected and Epidemic Diseases Act of 1897 was enforced. The incidence in other districts was mild, some of the districts remaining completely free. In Punjab all the districts were affected and the incidence was high in January and again in April. In Rajasthan smallpox epidemic broke out in all divisions, seven districts being the wrost affected. In Pepsu almost all districts were affected. The detailed position in the various States during the year is shown in Table 11.

PLAGUE

During the year under report, the States of Hyderabad, Himachal Pradesh, Coorg, Delhi, Tripura, Rajasthan, PEPSU, Madhya Bharat and Saurashtra remained free from plague. A few cases and deaths were reported from Andhra, Madras, Uttar Pradesh, Vindhya Pradesh and Mysore. Incidence of the disease in Madhya Pradesh, was slightly higher as compared to that of the previous year. During the past few years there has been a steady decline but a slight rise in incidence at times is an indication for vigilance and a warning against complacency. D.D.T. was used as an antiplague measure for the first time in Andhra, Vindhya Pradesh, Mysore and Madras. Seven districts of Madhya Pradesh were affected by plague, and a little over five thousand cases reported with a case fatality rate of 13 per cent. as against 10 per cent. during 1952.

The incidence was at its peak during February, March and April. Incidence of this disease was mild in a few districts of Uttar Pradesh. A research unit established last year at Deoria to study the factors responsible for endemicity continued its investigations. Extensive use of D.D.T. and Gammexane D. 025 suppressed the disease in the endemic areas of Punjab. Nine districts of Mysore State were affected during the year.

The following table shows the incidence and preventive measures adopted by different States.

Name of States	No. of distt. affected	Cases	Deaths	Case fatality rate	D.D.T.	No. of Anti-Plague inoculations
1	2	3	4	5	6	7
Andhra . . .	1	9	3	..	+	1665
Bihar . . .	..	..	..	..	..	30080
Madhya Pradesh .	7	5047	679	13%	..	110959
Madras . . .	1	9	6	..	+	..
Uttar Pradesh .	15	458	155	34%	..	295260
West Bengal . .	..	..	..	..	..	34813
Mysore . . .	9	231	106	46%	+	11371
Vindhya Pradesh .	3	106	35	33%	+	..
	36	5860	984			484448

CHOLERA

Colera is a notifiable disease in almost all the States. Statistics of morbidity and mortality, though not quite accurate are good enough for year-to-year comparison for the same State. The disease is endemic in Assam, Bengal, Manipur and Madras and is usually imported from these States to the neighbouring States. Infection is usually carried from West Bengal along the Gangetic Valley to Bihar, Uttar Pradesh and Punjab and from Bihar to Nepal. Other routes are from Orissa to Madhya Pradesh and from Madras to Andhra Pradesh, Mysore and Kerala. The disease seems to follow a set-pattern both in regard to the geographical distribution and seasonal occurrence.

Table 12 shows the number of districts affected, cases notified, deaths, case fatality rate, deaths expressed as percentage of all deaths, period of peak incidence, the number of cases at peak incidence, and the number of inoculations performed in the States.

The table reveals that cholera attained its peak incidence in the summer months March to June in most States except Madras and Tripura where the maximum was reached in January and December respectively, and Mysore showed two peak periods-July, and December. Almost all the districts in the States of Bombay, Madhya Pradesh, Madras, West Bengal, Mysore and Bhopal were affected. Punjab, PEPSU, Himachal Pradesh, Saurashtra, Ajmer, Coorg, Delhi and Manipur remained practi-

cally free from cholera. Health authorities of the affected States carried out mass inoculation and disinfection of drinking water as the most effective preventive measure.

It will be observed that the disease was present in Andhra State throughout the year and was most widespread in the months of August and September when 8 out of 11 districts were affected and four of them in an epidemic form. Similarly, the disease was prevalent all through the year in Bihar, showing its maximum severity in August, assuming an epidemic form in three districts. About nineteen districts of Bombay State were affected and six severely. In three districts it continued in epidemic form for about two months. The severity of epidemic was of the same order as in the epidemic of 1941-42. The Cholera situation in Madhya Pradesh, too, was equally severe where at one time 20 districts were affected, and in twelve of them epidemic conditions prevailing. The State became free only towards the end of the year. In five districts of Madras State, the disease broke out in epidemic form. It was less severe in the other seven districts. The disease was present throughout the year and wide-spread in the month of January and again in October, November and December.

Cholera infection persisted in one part or the other of Orissa in a mild form and did not assume epidemic proportions.

The Epidemic Diseases Act of 1897 was enforced in all affected areas. Incidence was mild in twenty-seven districts of Uttar Pradesh, while it was in an epidemic form in one district. The State remained free during the months of January and February and again in November and December. Cases were reported throughout the year from West Bengal the disease being wide-spread.

Hyderabad State was free from cholera only during the last two months of the year, reaching epidemic level in nine districts in July, Cholera remained prevalent throughout the year in parts of Mysore in a mild form. Another State hard hit was Vindhya Pradesh where it assumed epidemic form in four districts. Madhya Bharat, Travancore-Cochin, Bhopal and Tripura reported sporadic cases.

MALARIA

The States of Bombay, Madhya Pradesh, Uttar Pradesh, West Bengal, Delhi, Madras, Punjab and PEPSU have begun to register malaria deaths separately, but it is still difficult to be certain that the fevers so registered are Malaria. In some States malaria mortality figures are available for certain municipalities and towns only. Therefore, for purposes, of any estimation of incidence or to draw inferences, we have still to fall back on the figures of the group of diseases designated as fevers.

The percentage of deaths due to "fevers" varied from State to State. The highest percentage of deaths under fevers was recorded in Bhopal (86 per cent.) and the lowest in Madras (17 per cent.). For Bihar, Punjab, Uttar Pradesh and Himachal Pradesh it varied between 70 and 75 per cent. In Delhi, it was 22 per cent., *i.e.*, slightly more than for Madras. For other States, it varied between 60 per cent. and 30 per cent. In the case of States where malaria deaths have been registered separately from those due to other fevers, the percentage of the former to the latter varies from State to State. It was 1:8 per cent. in Punjab and 80 per cent. in

Madhya Pradesh. As may be seen from Table–13., this variation persists. For example, in Uttar Pradesh the percentage decreased from 87 in 1949 to 25 in 1953. If we assume the 'fever' deaths and deaths from malaria are correlated, then we have to conclude that some of the States namely, Madhya Pradesh, Mysore, Punjab, Uttar Pradesh, Himachal Pradesh and Bhopal did show a slight rise in the incidence of malaria during the period under review.

With the introduction of the National Malaria Control Scheme designed to provide malaria control on a nation-wide basis to protect 125 million people residing in malarious areas by the establishment of 125 Field Malaria Control Units, it is expected that this will not only lead to opening up of vast areas for cultivation and habitation, but also in the very near future to eradication of the disease, and healthy living.

The measures contemplated are residual indoor spraying of houses with DDT and the treatment of those cases encountered during the course of spraying operations and epidemiological survey. The operation period is three years starting from 1953-54. The Technical Co-operation Administration will provide the assistance supplying DDT, transports and equipment, which will be supplied free of costs to State Governments by the Government of India. In addition to the above, the Government of India will incur expenditure on (1) the free supply of anti-malaria drugs as well as DDT produced in the Government DDT factory and (2) the expansion of the Malaria Institute of India with a view to providing training and guidance and overall supervision of operations. The expenditure by the State Governments will be confined to the costs of local operating teams and incidental expenditure including import duty, freight duty etc. This will be about Rs. 1,93,000 per Malaria Control Unit. There will be 90 such Units working during the first phase of the programme in 1953-54, which will be expanded to 125 Units in 1954-55. (vide Table 14). Fractions of Units allotted refer to the actual population strength of that particular State. No units were allotted to States of Rajasthan, and the Islands of Andaman & Nicobar. Table 15 details the anti-malaria drugs issued to each State under the Scheme.

The malaria season varies from State to State, and even from district to district depending on the malariogenic factors like the vector mosquitoes, terrain, meteriological conditions, etc. As a rule the transmission season in the major part of the country extends from July to early November with peak between September and November. In a few areas the transmission season may extend up to December or even February. But under the latter circumstatces the transmission commences somewhat later. However, in some of the districts of Mysore and Kerala the transmission usually begins in December/January and extends up to June. On the other hand it may be mentioned that in various parts of Assam, Tripura, Manipur, Orissa, etc., transmission would appear to be perennial. Accordingly the application of the two rounds of residual insecticide spraying operations under the National Malaria Control Programme have been adjuted according to the local transmission reason.

DYSENTERY AND DIARRHOEA

The practice of grouping dysentery-diarrhoea returns of deaths continues. As the symptoms have some resemblance to those due to cholera mis-classification of deaths is likely to occur. Table 16 gives the percen

tage of total deaths due to the two diseases and death rates per mille during the past few years. It will be observed that this percentage is as high as 20 for Tripura State and as low as 0.5 for the State of Bihar.

Dysentery and Diarrhoea account for a large percentage of deaths in the States of Andhra, Madras, Orissa, West Bengal, Coorg, Delhi, Himachal Pradesh, Travancore-Cochin, Madhya Bharat, Manipur, Rajasthan, Saurashtra, and Tripura. As for the remaining States, diarrhoea and dysentery do not play a significant part as a public health problem.

In case of Bihar, however, the percentage is far too low to be accurate. The death rate due to these two diseases is on the decline except in the States of Bihar, Delhi, Madhya Pradesh, Bombay, Mysore, Punjab, Uttar Pradesh, West Bengal and Himachal Pradesh.

RESPIRATORY DISEASES

Disease of the respiratory system include tuberculosis, pneumonia and bronchitis. Tuberculosis has assumed increasing importance during recent years and has attracted the attention both of Government and public and work on its control is being done by all States. Information on pneumonia and bronchitis, is too fragementary to admit of analysis. The number of cases treated by the hospitals and dispensaries in different States are the only records so far available.

Table 17 shows the percentage of deaths reported due to the respiratory diseases, in different States during the years 1952 and 53. It will be noticed that this group of diseases accounts for a substantial percentage of mortality in the country. A large number of deaths in this group can be ascribed to tuberculosis.

TYPHUS

Typhus is a notifiable disease but information is scanty, mainly because of difficulty in correctly diagnosing the condition. Some deaths were reported from Greater Bombay and Coorg. No case was reported from Madhya Bharat or Tripura, and information from other States on the subject is lacking.

ENTERIC GROUP OF FEVERS

Statistics of cases and deaths and information regarding the steps taken to check Enteric group of fevers are available from some States. The disease was prevalent in sporadic form in urban areas of Bihar, Bombay, Madhya Bharat, Pepsu, Travancore-Cochin, Delhi, Himachal Pradesh, Tripura, Coorg and the Andamans. The contacts were protected by T.A.B. inoculation. The number of cases and deaths so far reported are as follows:—

State	Year	Cases	Deaths	Inoculations
1	2	3	4	5
1. Bombay	1952	..	3871	..
	1953	..	4385	..
2. Madhya Bharat	1955	2,900	..	..
3. Pepsu (one district only)	1953	8	..	9671
4. Travancore-Cochin	1953	1,73	792	217,000
5 Delhi	1953	..	831	..
6. Himachal Pradesh (one district only)	1953	57	..	..
7. Andamans	1953	34	1	472

KALA-AZAR

Kala-azar is mainly confined to the eastern States, namely, Assam, West Bengal, Bihar, Uttar Pradesh and Tripura. It is endemic in certain areas of these States and constitutes a major public Health problem. Cases were reported from Bombay and Madras, but not to a significant extent. It has been greatly reduced through extensive treatment facilities in the northern districts of Bombay and West Bengal. 20 Kala-azar centres for treatment were maintained during the year.

The disease is endemic in the eastern districts of Uttar Pradesh where D.D.T. is found to be an effective measure against the insect vectors. The State Government proposes to establish control units in endemic areas. One thousand deaths were reported to be due to this disease in West Bengal. The State Government distributed Rs. 20,300 in grants to district Boards to help them in their anti-kala-azar measures. A special grant of Rs. 9,663 was given to the Darjeeling District Board to continue work of eradicating the disease. A grant of Rs. 2,500 was given to the Central Co-operative Anti-malaria Society for opening kala-azar treatment centres on a co-operative basis. An intensive survey on the prevalence of sand-fly and kala-zar morbidity was carried out in three villages with a population of 22,700 in the Ramnad Taluk of Madras State and indoor residual D.D.T. spraying done as an experimental measure against sand-fly. Also, a study on the comparative efficacy of various control methods and the resulting incidence of kala-azar was undertaken. A sum of Rs. 23,200 was sanctioned for sand-fly and gunieoworm control. As the diseases were reported to be endemic in some parts of the city of Madras, a scheme for an experimental centre was recommended to the city corporation.

CEREBRO-SPINAL FEVER

Altogether, 274 deaths were recorded as due to Cerebrospinal fever. Of these, 178 deaths were reported in Delhi as against ten in the previous year. Only five cases were notified to the health authorities during the year. Obviously the notification of this disease is very poor. Twenty cases were reported in the Gird District of Madhya Bharat.

VENEREAL DISEASES

In the absence of a country-wide survey, it is difficult to hazard and estimate the incidence of veneral diseases in India. Hospital and dispensary records in the States are the only sources of information, since a stigma is attached to the diseases. Nevertheless, it has been observed that the incidence is high in seaport towns, industrial centres and in the hill districts. The WHO and the UNICEF continued to take considerable interest in the promotion of anti-venereal diseases activities. Clinics, static and mobile, functioned with laboratory aid and supplies of PAM were issued but restricted to women and children.

The State Governments because of their pre-occupation with health problems of more pressing nature did not direct their activities to this field. Hence, facilities for case-finding, contact tracing, followup and welfare work suffered. The Government of India and the International Agencies are providing training facilities and demonstration centres. Facilities for treatment through special institutions, clinics and specialists

exist only in some States, but the larger General State Hospitals and dispensaries have adequate facilities for such treatment in all States.

The more advanced States like Bombay, Madras, West Bengal and Orissa spend each year large sums for the newer drugs, laboratories and treatment methods. Clinics and sub-clinics are opened at dispensaries. The anti-venereal disease team gives mass treatment to the people in the Kulu area (Punjab) just as the Mobile Venereal Diseases Control Team in the Jaunsar-Bewar area of Uttar Pradesh, and the special team at Jagdalpur (Madhya Pradesh). Personnel are trained at the Venereal Diseases Reference Laboratory Simla in anti-V.D. work. It was set up by WHO. Similarly a centre had been set up under WHO technical guidance in Madhya Pradesh, two units by UNICEF in Hyderabad, and a V.D. Centre in the Victoria Hospital, Mysore supported by WHO and UNICEF with equipment, field unit and PAM for women and children. A central V.D. Unit in Jammu & Kashmir divides its personnel for field work, laboratory and running a model Clinic. Venereal diseases incidence is highest in Himachal Pradesh and very low in Rajasthan, Saurashtra, Bhopal, Coorg and the Islands of the Andamans and Nicobars.

For further details *vide* Tables 18-23-24.

LEPROSY

Leprosy, like Tuberculosis and Malaria, is a major public health problem confronting India. The States most affected are Andhra, Travancore-Cochin, Madhya Pradesh, Himachal Pradesh, West Bengal, Madras, Uttar Pradesh, Bombay and Orissa. This was pointed out in November 1949 by the Health Survey and Development Committee, which recommended the establishment of a Central Leprosy Teaching and Research Institute should be established at Chingleput, Madras, by taking over the existing Lady Willingdon Leprosy Sanatorium and the Silver Jubilee Children Clinic at Saidapeet. Further expansion of the above institutes would be necessary. Both the Governments of India and Madras decided to establish the Central Leprosy Teaching and Research Institute at Chingleput under the administrative control of a Governing Body and a provision of Rs. 5 lakhs made in the Budget Estimates of the Central Government for 1954-55.

To observe the effect of mass sulphone treatment on the control of leprosy, a scheme for pilot projects for the control of leprosy was included in the revised First Five Year Plan involving an expenditure of Rs. 16 lakhs. This scheme envisaged the establishment of a number of pilot projects for the control of leprosy by mass treatment and health education of the people in matters relating to the infectivity of the disease and its prevention. Thus six Pilot Centres would be established in diffenent parts of India, where leprosy is a major health problem. The centres will be called Study and Treatment Centres and Subsidiary Centres. The scheme had been forwarded to 13 Governments where leprosy is a serious problem.

The following brief account gives the prevalence of this disease and the facilities for its treatment and control available in various States of India.

Andhra.—Leprosy is prevalent in Bobbili, Salur, Palakonda and Srikakulam taluks of Srikakulam district, Vizianagaram taluk of Visakhapatnam district, Krishna district, Kurnool district, East and West Godavari districts. The Gandhi Memorial Foundation opened an asylum at Chilakalapalli. The Canadian Baptist Mission maintains a home at Ramchandrapuram taluk (East Godavari), while the Bethseda Leprosy Hospital with 130 beds conducts out-patient clinics at five places in West Godavari district. The hospital Kesarapalle is maintained partly by the Hind Kusht Nivaran Sangh and partly by the State Government in the Krishna district. A leprosy ward of 10 beds was opened in the Government Headquarters Hospital, Kakinada, East Godavari with out-door clinics at Salur, (Visakhapatnam) Relangi, Attili and Palakol in the West Godavari district.

Assam.—A total number of 557 leprosy cases had been treated during 1953 in 39 clinics of this State. There are eleven leprosy institutions in this State including Leprosy Missions. The work done by the Leprosy Missions especially by the Berbhata Leprosy Colony at Jorhat run by American Missionaries was good. A special Leprosy Officer has been employed by the State to look after the leprosy work.

Assam.—The incidence is not high and therefore, it is not a public health problem. Patients are treated in the leprosy asylum and centres of the State.

Bihar.—Leprosy forms one of the major health problems of the State. The incidence being fairly high in Manbhum, Singhbhum and Santhal Parganas. A capitation grant of 10 rupees per month per bed is made by the Government towards the nine leprosy asylums, besides the 66 special leprosy clinics which are also supported by the Hind Kusht Nivaran Sangh.

Bombay.—The State Government has taken over the responsibility of providing free treatment to all leprosy patients and making necessary arrangements with dispensaries, centres and homes for their treatment and control.

Madhya Pradesh.—The incidence here is high ranging from 0.38 to 1.04 per cent and as high as 2% of population in the highly endemic areas. The districts affected are Raipur, Durg, Bilaspur, Raigarh, Surguja, Bastar, Balaghat, Nagpur, Chanda, Bhandara, Wardha, Amravati, Akola, Yeotmal, Buldana and Khandwa.

21 special leprosy clinics and 75 clinics attached to general hospitals and dispensaries besides voluntary organisations as Mission to Lepers, Hind Kusht Nivaran Sangh, Maharogi Seva Mandal, Maharogi Sewa Samiti and the Village Uplift Committee, are continuing their good work.

Madras.—The incidence is heavy in South and North Arcot, Chingleput and Salem districts. The density varies from 40.5 per mille to 10 per mille. The open case rate varies as high as 100% and as low as 5%. Survey in Madurai and Tanjore districts reveal a fairly moderate incidence of the disease. The leprosy department attached to the general hospitals at Madras, Madurai and Vellore have been reorganised. The State Leprosy Survey Unit has made Vellore its headquarters.

Orissa.—The incidence is high particularly along the coastal regions. Sample surveys reveal 0·45 per cent or roughly 1·03% as incidence of the disease for the whole State. A net work of rural leprosy clinics and colonies continued their work. The State Government makes an annual grant of Rs. 27,000 to the Hind Kusht Nivaran Sangh for preventive, curative and propaganda work in rural areas.

11 leprosy clinics were opened in the districts of Puri, Sambalpur and Koraput. The fourth All India Leprosy Workers Conference was held at Puri in January, 1953.

Punjab.—Leprosy is endemic in the Kangra district. The State Government aids the leprosy homes by supplying sulphones to the various clinics in the districts.

Uttar Pradesh.—A mobile anti-leprosy unit with headquarters at Gorakhpur for the districts of Deoria, Gonda, and Bahraich was established. The unit carries out leprosy surveys and does health propaganda. In addition to special treatment centres, general hospitals and dispensaries treat leprosy cases. Institutional treatment is given by 16 institutions in the State. The leprosy colony Muni-ki-Reti and Kusht Sewa Ashram at Bansi were opened during the year under review.

West Bengal.—The incidence of leprosy is very high in the dry laterite tract to the west of Bhagirathi particularly in the districts of Bankura, Midnapur, Birbhum, Burdwan, Hooghly and Murshidabad. 25 per cent of cases are of the infective type. There are 943 beds for indoor treatment in 10 institutions. Gouripur Leprosy Colony, Bankura has an additional 100 beds this year.

The Harish Chandrapur Leprosy Clinic in Malda district closed down in April, 1953 and the Gajole Leprosy Clinic in the same district was opened on the first June, 1953.

Hyderabad.—The gross incidence of leprosy is 5 per thousand of population. During the year leprosy work was conducted in 156 out-patient leprosy clinics attached to hospitals and dispensaries. 18 new leprosy clinics were opened during the year and rehabilitation of the leprosy cases by employment in cottage industries and agriculture, weaving of mats and carpets, etc. have been provided for.

Madhya Bharat.—Leprosy is prevalent only in certain areas of this State. There are three leprosy homes at Indore, Ujjain and Rajgarh for the treatment of Leprosy patients. Besides this, there is one Private Leprosy home at Dhar, run by the Canadian Mission.

Himachal Pradesh.—Himachal Pradesh has a fairly high incidence of leprosy especially in the districts of Chamba and Mahasu. There is one leper asylum at Saraul in Chamba District with in-door bed accomraodation for 32 patients and one in Mandi District with 25 in-door beds. In addition, 3 clinics and 7 leprosy centres are also attached to the dispensaries where treatment of leprosy is given in Chamba District. The treatment of leprosy patients of Mahasu and Bilaspur Districts is given at Districts.

Travancore-Cochin.—Leprosy is prevalent in almost all the coastal taluks. Facilities for treatment at the five leprosy hospitals and three clinics have been provided.

The prevalence of leprosy in the States of Rajasthan, Saurashtra and in other part 'C' and 'D' States is low.

For further details, *vide* appendix tables 19, 23, 24.

BLINDNESS AND EYE DISEASES

The incidence of eye diseases in India is fairly high. Very few of the big States have special eye hospitals, but, general hospitals of all the States are equipped to meet eye conditions of a general nature. Big States also hold Eye Relief Camps so that the relief is carried to the villager. There are 32 such institutions in India.

States which hold periodic Eye Relief Camps are those of Bihar, Bombay, Madhya Pradesh, Madras, Uttar Pradesh, Pepsu, Delhi and Vindhya Pradesh. These camps are sponsored by the Government in some cases and in other cases by Philanthropic Societies and Charitable Organisations. A mobile ophthalmic unit works in the southern division of Bombay, besides the Henderson Eye Hospital at Bijapur, the Blind Relief Association and Missionary Institutions.

The four private eye hospitals of the Blind Relief Mission at Nagpur continued the work satisfactorily in Madhya Pradesh. The Government Opthalmic Hospital, Madras, the Swedish Mission Hospital, Tiruppattur and the Moses Gnanabaranan Eye Hospital, Coimbatore in conjunction with the Blind Relief Committee of Tiruchirapalli branch of the Indian Red Cross Society conducted eye relief work in the State. Seth Karori Mal Eye Hospital, Bhivani, Punjab and the Model Eye Hospital, New Delhi, were opened during the current year. Certain measures were undertaken by some States to prevent blindness, such as, compulsory vaccination against small-pox, examination of school children with reference to eye ailments and vision defects and welfare work among infants and toddlers at the maternity and child welfare centres and by domiciliary visits.

States of Rajasthan, Saurashtra, Travancore-Cochin, Ajmer, Bhopal Coorg, Himachal Pradesh, Manipur, Tripura and the Andaman & Nicobar provided facilities for eye relief at their various hospitals and dispensaries. They had no special eye hospitals.

For further details *vide* tables No. 20, 23, 24.

TUBERCULOSIS

Tuberculosis is a major health problem. Various measures are adopted for the control and cure of the disease. The number of outpatient department clinics and beds were increased; the model teaching and demonstration centres continued their diagonostic and advisory services, and the training of medical and para-medical personnel begun. Mass radiography of Central Government employees in Delhi was conducted and after-care colonies were opened. But the most exclusive and organised measure was in the preventive sphere. Mass B.C.G. vaccination campaign continued to receive good response from the people and nearly 7·2 million persons were successfully vaccinated which is about as much as the combined total of the two preceding years.

The following paragraphs describe the general progress in combating tuberculosis and the efforts of individual States.

B.C.G. Vaccination.—B.C.G. Vaccination programme gained additional momentum during the year 1953. The number of States which accepted the mass campaign scheme increased from 11 to 21. There were 110 vaccination teams working at the end of the year as compared to 99 at the end of the previous year. And in most of the teams the number of technicians was raised from 3 to 6. Thus, at the end of the year under report, 135 medical officers, 500 technicians and over 300 ancillary personnel were engaged in the campaign. United Nations International Children Emergency Fund continued their assistance and allotted supplies worth Rs. 6·6 lakhs during the year.

The progress of the campaign since its commencement in 1951 is shown below:—

Year	Number of persons (in lakhs)	
	Tested	B.C.G. vaccinated
1951	37·17	11·70
1952	68·23	21·43
1953	124·87	38·57

The number of tests and vaccinations up to the end of 1953 exceeded 230 lakhs and 71 lakhs, respectively. It includes those tested and vaccinated prior to 1951.

B.C.G. Day.—In order to focus public attention on the value and urgency of B.C.G. vaccination, a "B.C.G. Day" was celebrated throughout India on 23rd February, 1953. Extensive health education on the prevention of tuberculosis, with particular emphasis on B.C.G., was carried out through lectures, meetings, group discussions, distribution of leaflets, display of posters, exhibitions, and showing of films, filmstrips and cinema slides. The "day" was celebrated even in the remote rural areas of some of the States.

B.C.G. vaccine laboratory.—During the year 1953, the laboratory supplied 38,49,815 cc. of PPD solution and 18,32,705 cc. of B.C.G. vaccine to the various States in India besides forwarding supplies to Burma, Ceylon, Malaya and Singapore.

Tuberculosis Clinics.—At the end of 1953, there were 164 clinics as against 110 in 1950.

Teaching and Demonstration Tuberculosis Centres.—The three model centres established at New Delhi, Patna and Trivandrum continued to function during the year. International staff provided by the World Health Organisation was withdrawn by the end of 1953.

Mass Radiography.—A mass X-Ray examination of Central Government employees stationed in Delhi and New Delhi was undertaken by the New Delhi Tuberculosis Centre at the instance and under direction of the Director General of Health Services. Over 2,500 persons were radiographed between April and December, 1953.

Beds for isolation & treatment.—The total number of beds for tuberculosis patients increased to 15,211 during the year 1953.

After-care.—By the end of 1953, 7 after-care colonies for tuberculosis patients had been established.

Research.—The study which is being conducted at Madanapalle on the problem of tuberculosis morbidity and mortality under Indian conditions was continued during 1953. A research study was also carried out on the effect of direct sunlight, on B.C.G. vaccine. It showed that, if, after vaccination, the vaccinated site was exposed to sunlight, such exposure did not affect the allergy-producing property of the vaccine.

Treatment of Displaced Tuberculosis Patients.—Arrangements for the treatment of displaced persons suffering from tuberculosis were continued during 1953 by a grant given for this purpose by the Ministry of Rehabilitation.

International Assistance to the Anti-Tuberculosis Programme.—During 1953, assistance for Anti-Tuberculosis programmes from international agencies continued; the World Health Organisation provided 6 international personnel and the United Nations International Co-operative Emergency Fund a further grant of $1,40,000 for equipment.

A description of the measures taken by various States follows.

Andhra.—Tuberculosis is widely spread in the districts of Nellore and Cuddapah. While much attention is being paid to the curative aspect, preventive measures lag far behind. In almost all the hospitals, provision exists for the treatment of tuberculosis on modern lines. Government gives subsides and grants-in-aid to such hospitals and sanatoria as have facilities for the treatment of this class of patients. The Government Welfare Fund Tuberculosis Hospital constructed at a cost of Rs. 4,00,000 is functioning since 30-8-52. An out-patient Tuberculosis clinic is attached to the Government Headquarters Hospital, Nellore. A regular follow-up of discharged patients, and the examination of contacts of tuberculosis patients discharged from the Government Headquarters Hospital, Nellore, is done at the Hospital.

Assam.—The spread of tuberculosis is a serious problem in the State. To combat it, BCG vaccination on mass scale through 5 specially trained mobile teams is in progress since July, 1953.

Bihar.—The only sanatorium at Itki in the State accommodates 141 paying and 44 free patients. In addition, most of the 18 provincialised Hospitals have 10 beds each for indoor patient. The Government has under consideration the question of construction of a 75 bedded hospital at Koilwar.

Bombay.—The Government have sanctioned 5 more BCG vaccination teams in addition to the two already working in Bombay & Baroda. A post of a tuberculosis social worker was created at the J. J. Group of Hospitals in August, 1953.

Some of the Tuberculosis institutions were given grants-in-aid.

Madhya Pradesh.—Persons suffering from tuberculosis were given treatment at all the State hospitals and dispensaries. On the preventive side, domiciliary visits by the mobile tuberculosis dispensary staff (which also arranges talks and distributes handbills and pamphlets) proved useful. Hospital treatment was available at the Pendra Road Sanatorium, the Tuberculosis Sanatorium, Chindwara, the Medical College and Hospital, Nagpur and the provincialised hospitals at Nagpur, Amraoti, Raipur and Jabalpur. A tuberculosis ward of 16 beds was attached to the main hospital, Akola. Construction work on a 50 bedded sanatorium at Buldana was in progress, and a 10 bedded ward was attached to the main hospital at Wardha during the year.

Madras.—Tuberculosis is widely prevalent in the State. 4 clinics are attached to the four State Hospitals in the city apart from the Tuberculosis Institute, Egmore. The Government Tuberculosis sanatorium, Tambaram, Madras city has 529 beds for indoor patients. Most district headquarter hospitals have tuberculosis clinics. Several more sanatoria are being planned in the moffusil so that each district may have one. The

Government Tuberculosis Sanatorium mentioned above, also gives training in thoracic surgery and prepares doctors for the T.D.D. course. BCG vaccination work is in progress.

Orissa.—No survey work to assess the incidence of tuberculosis prevailing in the State has been carried out; but judging from the figures obtained from various hospitals and dispensaries, and BCG vaccination statistics, it is inferred that the disease is widely prevalent in urban as well as in rural areas. The tuberculosis hospital at Uditharayanpur continued to function and its strength was raised to 35 by adding 10 more beds. Treatment facilities have also been provided in tuberculosis wards attached to the S.C.B. Medical College Hospital, and the infectious diseases hospital. On the preventive side, mass scale B.C.G. vaccination is being carried out by 3 vaccination teams. Propaganda work, such as, lectures, lantern shows, etc., was also done.

Punjab.—The tuberculosis problem in this State is no less acute than in the other States of India. Facilities for its prevention and cure are comparatively meagre. As a preventive measure, mass BCG Vaccination is being carried on.

There are 320 beds in the three hospitals recently established in the State. Wards at the Gujarmal Kesara Devi Tuberculosis Sanatorium, Amritsar are under construction. A new sanatorium, has been opened at Tanda, District Kangra with 120 beds.

The clinic working at Rewari in Gurgaon district had to be closed for want of funds.

Uttar Pradesh.—Tuberculosis is a major health problem of the State. The major preventive activities is through mass BCG vaccination. Accommodation for indoor patients in hospitals and sanatoria was increased during the year.

Hyderabad.—There are two tuberculosis hospitals one at Irranmnuma, six miles from Hyderabad and the other at Mominabad in Bhir district. One sanatorium is situated on Ananthagiri hills at Vikarabad, district Medak. Three clinics are functioning at Dabeerpura (Hyderabad), Secunderabad, and Kareemnagar. The hospitals, sanatoria and clinics mentioned above have adequate facilities for diagnosis and treatment. 6 units are engaged in domiciliary service in Hyderabad and Secunderabad. Patients are visited and treated at home and, if necessary, removed to hospital for further attention. BCG Vaccination is in progress.

Jammu & Kashmir.—Tuberculosis is considered to be a major health problem in the State. On the curative side, increased accommodation for hospitalisation of tuberculosis patients is being provided and on the preventive side, mass BCG campaign, conducted.

Madhya Bharat.—There are 210 beds for the treatment of tuberculosis patients in the hospitals and clinics of the State. Two clinics at Dewas and Shivpur were opened, under the first Five Year Plan, during the year.

Large scale propaganda was undertaken in towns and villages through health exhibitions, lectures, magic lantern shows and distribution of handbills. Mass BCG vaccination programme was carried out.

Mysore.—There is adequate provision for indoor patients in the hospitals, sanatoria and clinics of the State. To undertake a check-up, a mass X-Ray unit went into operation at the out-patient department of Victoria Hospital, Bangalore. Mass BCG vaccination has been progressing satisfactorily.

PEPSU.—Tuberculosis is a major health problem in this State as in other parts of the country, the main causes being over-crowding and malnutrition. The State Government and the Tuberculosis Association of PEPSU are striving to combat this menace by opening clinics, increasing the bed-strength, training personnel, financially helping tuberculosis patients, and carrying out wide publicity and propaganda.

Rajasthan.—The tuberculosis problem in the State is a serious one. There are 13 tuberculosis sanatoria and hospitals with tuberculosis wards in Rajasthan for indoor treatment. Facilities for proper diagnosis by X-Ray and clinical laboratory tests are also available. Additional beds are being put up in the King George V Sanatorium at Jaipur. A sum of Rs. 10,000 out of local fund for the construction of a tuberculosis ward in the general hospital, Jhalawar, has also been sanctioned and the work will soon be taken in hand.

Saurashtra.—The Government is running a 50 bedded tuberculosis hospital for displaced persons. There is one privately managed 126 bedded hospital at Amargadh and clinic at Rajkot run by the Indian Medical Association of Rajkot. It is proposed to open a tuberculosis clinic with a 20 bedded ward in each district hospital during the Five Year Plan programme.

Travancore-Cochin.—Tuberculosis is widely prevalent in the State and is a major problem awaiting solution. BCG vaccination programme is in force in the State.

Ajmer.—The incidence of tuberculosis appears to be on the increase mostly in displaced persons who are ill-nourished and are obliged to live in ill-ventilated houses with no facilities for segregation. There is no tuberculosis hospital in the State except the Madar Union Sanatorium which is a private, State aided institution. A tuberculosis clinic in charge of a qualified specialist-*cum*-radiologist is attached to the Victoria Hospital Ajmer, where all cases referred by the outdoor department of the Hospital and by private practitioners are investigated free of charge. On the preventive side, BCG Vaccination is being continued.

Bhopal.—It is difficult to assess accurately the prevalence of tuberculosis in the State; but from the increasing number of patients' attending the hospitals and dispensaries and from the reported number of deaths, it would appear that the disease poses a serious problem. During the year under review, a fully equipped tuberculosis clinic with 15 beds was opened in the city under a medical officer. Construction work on a 170 bedded hospital was undertaken by the State Government.

Coorg.—Tuberculosis is on the increase in this State. There are 2,000 persons suffering from this disease and the death rate stands as 300 per year in a population of $2\frac{1}{4}$ lakhs. 27 beds at the Mercara clinic and 12 beds at the clinic at Virajpet have been provided for indoor patients.

Delhi.—There are two tuberculosis hospitals, three clinics, and one chest centre attached to the S. J. Tuberculosis Hospital, for diagnosis, treatment and prevention. Besides BCG Vaccination, the preventive services include domiciliary visits, examination of contacts of tuberculosis patients, and the training of medical and para-medical personnel. BCG programme which was launched in the State in October, 1948, continued vigorously.

Himachal Pradesh.—Tuberculosis, particularly of the lung and abdomen, was very common in this State. There was a ten bedded tuberculosis ward in the district hospital, Nahan and a tuberculosis clinic with 25 beds at Mashobra, both of which were amalgamated. A well-equipped sanatorium with 40 beds for free treatment of indoor patients was opened by Government at Mandodher. Domiciliary visits were paid by health visitors in tuberculosis. Costly medicines were supplied free of cost.

Kutch.—While the incidence of tuberculosis appears to be on the increase in the State, arrangements were inadequate to meet the situation. The only private sanatorium at Bharapur was, however, given some financial assistance, and later taken over by the Government. Steps were being taken to educate people on the prevention of tuberculosis.

Manipur.—Additional improvements to the existing tuberculosis clinic at Imphal are under consideration. It conducts X-Ray and laboratory examinations, BGC vaccination is progressing satisfactorily. With the help of propaganda through posters, lectures at melas and fairs, lantern slides and dramatic performances, the public are being oriented in the prevention of Tuberculosis and its treatment.

Tripura.—The State has no special hospital or clinic. Facilities for diagnosis are, however, available in the general hospital. A scheme to open a tuberculosis clinic is under Government consideration. Preventive measures through BCG vaccination are however, in progress as is educational propaganda through posters, pamphlets etc.

Vindhya Pradesh.—The B.C.G. team appointed by Government is taking preventive measures through mass vaccination to check the spread of tuberculosis. There are no special hospitals or clinics, but aid is available in all general hospitals.

Andaman & Nicobar.—Tuberculosis is not a serious health problem in the State.

Further details are given in Tables 21, 22, 23, 24.

CHAPTER III

Health Activities of the Central and State Health Departments
Progressive Health activities—Boards of Health

A brief resume of health activities of the Boards of Health in the States, their development schemes and control of diseases peculiar to each State are detailed in the following pages:—

Andhra.—A scheme for the control of Yaws in the Agency tracts (hill) and scheduled tribes) was formulated by the State. This project is a joint venture of the State, the World Health Organisation and the U.N.I.C.E.F. The incidence of guinea-worm is high in the Royaleseema district. In the first instance, step wells and open wells were converted into draw wells as a preventive measure. Beri-beri is prevalent in the north coastal districts and in those districts where rigidily polished milled rice is the staple food. A research scheme on the incidence and control of beri-beri in Vizagapatnam and its environments with assistance from the Research Corporation, "New York" was under the consideration of the State Government. The Board of Health had felt the need for improving the training facilities of health visitors because of the acute shortage of nurses, midwives, etc.

Bihar.—Heavy floods devastated large tracts of the State. 8 distributing centres for medicines, clothes, welfare foods, etc. were opened to give immediate relief to the floods striken people.

Bombay.—The Board of Health had recommended to the State Government for grant-in-aid proposals for water supply to 19 towns and drainage to one. A framing of the Public Health Act was under the active consideration of the Government and a special Committee was appointed to submit a Draft Bill, to the Government within a year.

Madhya Pradesh.—The Government opened 25 centres for the training of dais during the year. The eradication of yaws was continued, patients being treated with penicillin.

Madras.—The State Government having accepted the recommendations of the Hotel Sanitation Committee set up two Standing Expert Committees for (i) evolving type designs of modern restaurants, standard of accommodation, equipment, lighting, ventilation, lay out of kitchen and (ii) for working out the desirable bacteriological standards for foods like ice creams, salads, etc. The Public Health Board considered the cheaper types of sanitary conviences and at such standards for production at the Government Ceramic Factory at Gudur. The increase of guinea-worm infection in South Arcot district required laboratory experimentation with 0·5 per cent. D.D.T. on cyclops. A survey of guineaworm and cyclop density in drinking water was conducted.

Orissa.—A training class for health visitors was opened at the Medical College Cuttack during the year.

Punjab.—The State Government constituted a Sanitary Board during the year. Eight water supply and drainage schemes costing Rs. 2 lakhs were sanctioned. To overcome shortage of sanitary inspectors in the State a class was started in 1952, while the Punjab Health School run by the Mission Hospital, Ludhiana with Government aid trained 8 lady health visitors. Since 1910 iodised salt is being distributed to the endemic area of Kangra district. This facility is now extended to Nangal township as well. The Pilot Goitre Survey Project and installation of a plan for iodising salt in Kangra District, is under the active consideration of State and Central Governments. In the field of Tuberculosis a hospital of 160 beds was opened during the year at Tanda in Kangra district. Three civil hospitals were taken over by the Government from Local Bodies as they were not maintained satisfactorily.

Uttar Pradesh.—The State Health Board spent nearly Rs. 5.5 lakhs on drainage and water supply schemes in the State. Iodised salt continued to be distributed to school children between the ages of 5 and 12 as a prophylactic measure during the Holy and Dussehra periods.

West Bengal.—Research on the incidence of goitre and the influence of daily diet on the disease, is still in progress in Darjeeling district. Water supply and drainage schemes undertaken were being completed during the year.

Hyderabad.—With assistance from the Governments of Madhya Pradesh and Madras and the World Health Organisations and United Nation's International Children's Emergency Fund, the anti-yaws campaign was being continued to eradicate the disease from amongst the wild tribes living in the interior of dense forest areas by mass treatment campaign.

Rajasthan.—Guineaworm infestation is prevalent in Udaipur division and in Jaipur. Disinfection of water supply and draculain for the cases were the measures instituted.

Bhopal.—Bhopal like Rajasthan, Andhra and Madras, also has to contend with guineaworm infection as a major health problem, step wells being the source of infection. Action is being taken to control the disease and convert the wells into draw wells.

Himachal Pradesh.—Hookworm disease is one of the health problems of the State, and active measures are taken for its control and eradication.

Rural Health, Water Supply and Conservancy.

New Delhi is having a modern filtration plant installed, north of the Chandrawal Filteration Plan, with a capacity of 15 million gallons a day. Another reservoir is under construction at Jhandewala to augment the supply of water to Old and New Delhi. A sewage treatment plant of 18 million gallons a day will be completed by the end of the year at Okhla and a sludge digestion plant to treat 4,00,000 cubic feet of sludge is also in the process of construction at Okhla. A sum of Rs. 128.25 lakhs was paid by the Centre to the Delhi Joint Water and Sewage Board, the Delhi Municipal Committee and the Delhi Improvement Trust for the execution of the above works. To check the discharge of sullage waters into the River Yamuna within the limits of Delhi, measures have been taken to install sewage treatment plants near Tihar on the Najafgarh Road; by the Qudsia garden; close to Kashmere Gate and nearabouts Rajghat.

Most of the States have taken up the question of safe water supply within their budget provisions and include drainage and conservancy. The bigger States of Bombay, Bihar, Orissa, West Bengal and Madhya Pradesh spent Rs. 31,03,000, Rs. 21,54,637, Rs. 8,00,000, Rs. 3,33,700, and Rs. 1,82,935 respectively.

Rural Health and Medical Relief.

Nearly 88 per cent. of the population of India live in villages where medical facilities are far from satisfactory. It is considered that the only practical solution for solving the rural health problems within the budget grants is the provision of a number of mobile units. A brief account of medical relief administered in rural areas of the States during 1953 are as follows:—

Andhra.—Local Fund dispensaries and subsidised rural dispensaries are working satisfactorily. Government hospitals have adequate equipment and facilities for both out-patient and in-patient treatment of medical surgical, obstetrical and gynaecological cases. Most of the dispensaries in rural areas have maternity assistant for conducting labour cases and performing institutional and domiciliary work. The number of dispensaries is inadequate, and steps are being taken to open others under the Second Five Year Plan. Distribution of medical institutions in the rural areas of Anantapur district is fairly adequate and a majority of medical institutions situated in rural areas are Ayurvedic. In some of the taluk headquarter dispensaries under the control of District Board, Anantapur, there is sufficient in-patient accommodation for people seeking treatment from remote places. A mobile medical van rendering medical relief to patients suffering from cholera and malnutrition in the taluk of Royachoty, was withdrawn as it had completed its work. A ward of 50 beds in the Government headquarter hospitals, Cuddapah, which was meant for treating in-patients suffering from malnutrition, was closed in 1953.

Assam.—Medical relief in rural areas received adequate attention from the State Government, while Public Health Department carried on health propaganda work in rural areas taking preventive measures against epidemics. Centres for medical relief were opened under the Community Projects Scheme in rural areas. In the newly created autonomous district of the United Mikir and North Cachar Hills, additional dispensaries were opened by the Government. Some of the permanently settled (Zamindari) estates in the State have their own dispensaries.

Bihar.—Grants were sanctioned to District Boards for improvement of medical relief in rural areas. Centres for distribution of medicines were also opened under the Relief Medical Officers and medical staff on epidemic work was supplied with drugs and village type medicine boxes.

Bombay.—As part of the programme of medical relief in rural areas, the State Government sanctioned a scheme providing for the appointment of 81 nurse midwives, the expenditure being borne by the State Government and the Local Boards concerned, in the ratio of 4:1. In view of the fact that it was not possible to extend the Subsidised Medical Practitioners Scheme due to lack of medical men and women, the State sanctioned the opening of 500 village first aid centres in the backward areas under the care of primary school teachers. With a view to augmenting

medical facilities in rural areas, Government have sanctioned 120 sub-dispensaries in the backward areas of certain districts to replace the touring Medical-*cum*-Propaganda Units. The Scheme envisages distribution of simple medicines through suitably trained social workers. Government have also converted the Medico-surgical Unit into a Mobile Ophthalmic Unit. This has proved very useful to ophthalmic patients in the rural population as it brings medical aid nearer home.

Madhya Pradesh.—Schemes for subsidising medical practitioners of modern as well as indigenous systems of medicine, and the opening of Ayurvedic and Unani dispensaries were pursued. The local bodies, *viz.*, Janapada Sabhas, took suitable steps to promote sanitary conditions and the supply of safe water. Precautionary measures, such as, chlorination of water vaccination and the distribution of prophylactic drugs, were carried out in the infected areas, and during fairs and festivals. An Anti-Yaws Campaign was opened in Chanda district with headquarters at Ahiri with United Nations International Children Emergency Fund help. The team moved from village to village, carrying out mass examinations and giving Penicillin injections to cases of Yaws. Malaria control work as part of National Malaria Control campaign was done in 12 districts protecting 5 million people.

Madras.—As medical men were not willing to take up employment in rural areas, a number of rural allopathic dispensaries continued to remain closed during 1953 and some were temporarily converted into those for the indigenous system of medicine. The State Government has liberalised the terms of service to attract medical men.

Orissa.—Realising the inadequacy of medical relief in the State, a scheme for the establishment of new dispensaries to augment medical relief on the basis one for 20,000 people or 100 sq. miles was brought into operation. By the end of 1953, the number of medical institutions working in the State were:—

Allopathic	301
Ayurvedic	73
Homeopathic	3

Punjab.—Medical relief in rural areas remained partly in the hands of local authorities and partly with the State Government. Government assistance varied over a wide range and was provided through rural and subsidized dispensaries and health bureaux. Medical Officers in-charge of rural dispensaries toured the surrounding villages within a radius of five miles, giving medical aid and attending to public health needs. Local fund institutions were generally lacking in equipment and financial means. Liberal grants were, therefore, made to them by Government for specific purposes over and above the normal maintenance grants.

Inspite of the fact that subsidy payable to sub-sidized medical practitioners has been increased to Rs. 100 per month, it had not been possible to secure the services of suitable medical practitioners for all the subsidized dispensaries with the result that some of these had to be looked after by dispensers and the rest remained unstaffed.

Uttar Pradesh.—There was continued expansion of rural medical relief. Three allopathic dispensaries were opened and four were provincialised. A maintenance subsidy of Rs. 600 to medical licentiates and of Rs. 1,080 to medical graduates was offered so as to get medical men to settle in villages.

West Bengal.—Improvements in medical relief facilities and control of epidemics of cholera and smallpox by the mobile medical staff were continued. Anti-malaria drugs were supplied free and 24 Relief Camp hospitals and dispensaries were set up for displaced persons which were some of the other measures taken by the State. Three travelling eye dispensaries subsidised by the State Government did useful work.

Hyderabad.—Rural medical relief received special attention in this State. The health staff visited villages, treated patients and carried out immunisation against plague, cholera and smallpox. The staff disinfected wells, delivered lectures on how to maintain good health and adopted suitable measures for the improvement of rural statistics. Public help and co-operation in the form of labour was availed of, and regular weekly and fortnightly clinics or children were held where children were bathed, weighed and their minor ailments attended to. So far, 1,438 medicine chests have been distributed in such of the villages as have a population of 1,000 or more, and are far away from hospitals and dispensaries. These chests were entrusted to local persons. Each medical chest contained simple remedies with instruction for their use, printed in local and regional languages and the persons incharge trained in their use.

Madhya Bharat.—Medical relief facilities in the rural areas of the State were provided by the opening of 10 Ayurvedic dispensaries, 2 maternity homes and child welfare centres. Eight eye-camps were opened and 1,098 eye operations performed. 3,829 medicine chests distributed to Gram Panchayats were refilled during the year.

Mysore.—The general policy of expanding medical relief facilities in rural areas was pursued.

PEPSU.—In addition to 56 dispensaries working in rural areas, there were 8 touring dispensaries which rendered medical relief to the rural population in their own villages.

Rajasthan.—Medical relief in rural areas was given through Government hospitals and dispensaries most of which were provided with indoor accommodation. Besides Government institutions, some big hospitals were privately managed. Apart from this, sanitary inspectors and vaccinators toured intensively to check spread of epidemic diseases and distribute prophylactic medicines. Ayurvedic Aushadhalayas provided curative facilities in rural areas.

Saurashtra.—Medical aid in rural areas was adequate. The State had provided in the Five Year Plan for a scheme of integrated health service in rural areas which is designed to give better service, both curative and preventive, including care of the expectant mother and child. The State has sanctioned sixteen posts of midwives for rural areas.

Under the village medical relief scheme, 50 medical boxes containing selected Ayurvedic medicines were distributed in rural areas for the treatment of simple ailments.

Bhopal.—Medical relief in rural areas of the State was provided through a net work allopathic, ayurvedic and unani dispensaries. Four mobile dispensaries worked during the year under report and brought relief to people who were not served by regular dispensaries. Subsidy in the form of Ayurvedic medicines worth Rs. 200 for free distribution was continued through the Director, Rural Uplift, Bhopal, to such subsidised practitioners as had been conscientiously working in those areas over a period of time.

Coorg.—Facilities for medical relief were satisfactory in the rural areas, but there were certain parts which were not easily accessible for want of proper communications.

Delhi.—Seven Allopathic dispensaries were maintained by the State Government, while six others were run by the District Board, Delhi. In addition, two mobile dispensaries maintained by the Government served about 20 villages on alternate days. Health centres in the refugee townships of Kalkaji, Tilak Nagar, Malviya Nagar and the eye hospitals at Kalkaji continued to function. The dispensaries opened in Moti Nagar Colony and Jhil Khuranja Colony catered to the population of those newly developed colonies.

Himachal Pradesh.—Rural medical relief work in the State received primary attention. All the hospitals and dispensaries were provided with sufficient equipment and modern medicines. In the districts of Mandi and Mahasu, mobile dispensaries carried relief to the sufferer's door. Because of the mountainous terrain, places could not be approached by motorable roads and so, the key Village Visit Scheme was applied to 25 dispensaries, the doctors incharge touring within a radius of 5 miles and attending to cases. Three Community Project Primary Health centres were organised in Community Project areas. Gram Sewaks were supplied curative drugs for distribution to ailing persons. A malaria out-post was opened at Mahipur in Simur District during the year.

Kutch.—Medical relief facilities in rural areas of the State were not adequate. Means of communication in the interior of the State were extremely difficult and amenities of life few in the rural areas. Hence, it was difficult to secure qualified medical men and other personnel for service.

Manipur.—Eleven dispensaries were opened in 1953 by the Government. By persuation and encouragement, and subsidy from Government, the villagers built dispensary buildings on approved design. Medical relief in rural areas was given through the school health service. Immunisation against cholera, compulsory vaccination against smallpox, and B.C.G. vaccination against tuberculosis were carried out. Anti-malaria programme and the training scheme for dais were implemented. Disinfection of water supply, digging of more tanks, introduction of water-seal latrines, construction of a new ward for leprosy patients in the hill areas and, lastly, provision of mobile dispensaries to serve the hills and valleys of the State were other measures taken in this direction.

Tripura.—Medical relief facilities in the rural areas of this State were inadequate particularly because of the paucity of funds and lack of proper communications. With general improvement in communications and grant of more funds, it had been possible to extend medical relief to the

remote rural areas by opening 16 more Allopathic dispensaries. The dispensaries were adequately provided with medical Stores and equipment, and a large number of patients were benefited.

Andaman & Nicobar Islands.—The population of these 200 and odd Islands is so sparse that except for Port Blair, the Headquarters of the Islands, the area has to be classed as rural. Even so, dispensaries and hospitals were fairly well located to serve the population.

Health Units.

A number of Demonstration Health Units have been in operation in the country. Primarily intended to disseminate information on public health matters, they act as demonstration centres and work out health problems to the benefit of the people.

Demonstration and Training Centres

Sl. No.	Units	Birth rate	Death rate	Infant death rate	Maternal Death rate	Remarks
1	Rural Health Demonstration Unit and Training Centre, Singur, West Bengal,	41·35	13·29	105·73	3·24	
2	Najafgarh Demonstration Health Unit, New Delhi .	49·5	17·4	98·28	2·0	
3	Poonamalee Demonstration Health Unit, Madras . .	25·7	21·2	154·2	Nil	
4	Rural Health Demonstration Unit, Sirur, Bombay.	38·10	31·72	176·38	5·30	The unfavourable changes noticed in vital statistics were in all probability the scarcity conditions which prevailed in 32 villages of the Unit and to the increase in deaths due to diarrhoea and dysentery affecting the vulnerable group from one to ten years and the respiratory diseases and senility.

The objective aimed at by the Demonstration and Training Centres is to determine the methods of public health administration, which can bring essential medical protection of the rural population within the limit of expenditure that a country can afford and to afford an opportunity for training medical and public health personnel.

1. *West Bengal:*

(a) The All India Institute of Hygiene and Public Health, Calcutta, is responsible for the overall administration of the Rural Health Demonstration Unit and Training Centre, Singur (West Bengal). The Centre trains students for the post-graduate courses in D.P.H., D.M. & C.W. etc., in field work. As it covers an area of 33 sq. miles with a population of 73,413 (1951 census), the health conditions maintained in the area are good. On the whole, there was an appreciable decrease in the epidemics. There was no case of smallpox and a decrease in the number of cholera and malaria was observed. School health programme was carried out in schools, co-ordinating health education.

(b) During the year under report, five twenty-bedded Thana Health Centres and 26 ten-bedded Union Health Centres were opened in West Bengal, besides one Union Health Centre without a hospital. Thus the total number of Health Centres in the Thana and Union Health Centres functioning in 1953 were:—

Health Centres	50 bedded	20 bedded	10 bedded	4 bedded
Thana	18	7	..	..
Union	Nil	..	97	43

One Union Health Centre without a hospital.

Each Health Centre combines in itself preventive, curative and positive health functions. An out-door dispensary is attached to each Centre.

2. *New Delhi.*—Najafgarh Demonstration Health Unit, Delhi, covers 72 villages. It works in close co-operation with the panchayats and the Bharat Sevak Samaj. There is a six-bedded hospital and a dispensary in the Centre. The staff of the Primary Health Centre have had the benefit of working with the WHO team in 1952, and the public health nurse assigned by WHO till 1953. NES blocks were begun in October of the year under review and a month later, a Primary Health Centre was established. One more Maternity & Child Welfare Centre was added, thus bringing the total to six in the Unit.

3. *Madras.*—As an experimental measure, the Poonamalle Demonstration Health Unit (Madras) opened a nursery health Centre for pre-school children. This served as an extension health service to the Maternity Home of the Centre. Stress was laid on environmental sanitation. 466 bored-hole type latrines were constructed and a scheme to provide 450 houses a year with sanitary conveniences at one-third the cost to the general public put into effect. Cholera was introduced from the neighbouring areas with 45 attacks and 15 deaths. The spread was checked.

4. *Hyderabad*:

(a) Model Medical Demonstration Health Unit, Pattancheru. It covers 30 villages and a population of 30,000. Started in 1951 as a demonstration and field training Centre with hospital and maternity ward, it has continued its hospital and ante-natal work, sanitation and health education propaganda among the villagers.

(b) Public Health Unit, Jammikunta. It is smaller than the Unit noted above, and concentrated its activities in the immunisation of the population against smallpox and cholera, disinfection of wells and care of the young.

(c) Mobile Medical Unit. There are 12 such which function in the State and cover areas protecting people against infectious diseases and give medical aid. Health propaganda by talks and shows are given.

5. *Bombay.*—Rural Health Demonstration Unit, Bombay. This unit was started fourteen years ago, for giving practical training to sanitary inspectors at Poona and Bombay. Health visitors were only given a fortnight's training. It was observed here that the Crude Death Rate and the Infant Mortality Rate were higher than those of the previous year. This was attributed to the diarrhoea and dysentery affecting the vulnerable age group and to senility and respiratory diseases. This unfavourable state might be due to the scarcity conditions which prevailed in 32 villages of the Unit area.

Rural Health Demonstration Centre, Manavadi. This Centre was started in Novemer this year in a block of the Community Project areas. Milk distribution and the provision of first-aid boxes to each school besides training school teachers in health matters were started. BCG vaccination and anti-cholera measures were instituted with one Mobile Health Unit to assist in the operation.

Community Projects and National Extension Service Blocks

Health activity forms an essential part of Community Projects and National Extension Service Blocks. There were 26 Community Projects at the end of the year in Uttar Pradesh, of which 17 were started in 1953. Each project had its sanitary inspector and four midwives. Nine posts of Sanitary Inspectors could not be filled for lack of personnel. Malaria surveys were carried out and special programmes on control of yaws, venereal diseases and leprosy worked out. Training was imparted to group-level and village workers in hygiene, sanitation and first aid in 34 extension Centres.

Ten National Extension Blocks functioned in Uttar Pradesh, each covering 100 villages. More health work was done in villages outside the block than in the Community Project areas.

Two Community Projects continued to function in Andhra State. Five Health Centres under the scheme were opened. Madras Government was considering the training of all grades of health personnel for the Projects. National Extension Service schemes were extended to 78 Blocks, thus spreading their mode of operation over the entire State.

In addition to the three blocks already in operation, nine more were started in Orissa State. Old wells were renovated and new ones sunk to meet the demands for water. West Bengal State bored 153 tube wells and constructed many masonary wells, to supply safe water to the villagers.

Two Community Project Blocks in Hyderabad were engaged in domiciliary maternity care and treatment, environmental hygiene, medical aid, prevention and control of epidemics and health education. Two more National Extension Service blocks were added this year to the existing one of the previous year.

Mysore State intensified its health measures on epidemic control and rural sanitation, introducing special hand-flush latrines and having soakpits dug for waste water disposal. Seven National Extension Service blocks were started in the villages. Rajasthan organised two more Community Blocks while Bilaspur concentrated on sanitation, with the help of its own sanitary staff and the co-operation of the Gram Sewaks.

Information from other States has not been received.

Medical inspection of School Children

The system of medical inspection of schools varies and no State has been able to meet fully the requirements in this field. In most States, only a small percentage of children could be examined, with follow-up in one or two States. Health Education with particular reference to personal hygiene appears to be totally ignored.

Medical inspection in the schools in Bombay, Orissa and West Bengal was fairly satisfactory.

Children in 2,667 schools in certain district local boards, cantonments and municipal areas of Bombay State were examined. Of the 1,51,715 examined, 39.16 per cent. were suffering from defective vision, malnutrition, enlarged tonsils or skin disease.

Medical examination of children could not be done at Calcutta, but, a follow-up was conducted by school nurses, who visited 336 homes, revisited 186 homes and delivered 336 talks. During the nurses' visits, 125 more children were detected, 63 of whom responded satisfactorily to treatment. In rural areas 44,000 students in 288 schools were examined. 23 5 per cent. were defectives. Malnutrition, dental caries, defective vision and enlarged tonsils were the main defects. 34 plans of school buildings were scrutinised during the year under report.

In Orissa, 62 schools were inspected and 7,626 children were examined. The percentage of defectives was as high as 53 · 24 per cent. Poor nutrition, enlarged tonsils, avitaminosis, caries of teeth and granular eyelids were the chief defects noted. The schools were improving the arrangements for drinking water.

Hyderabad and Secunderabad cities employed whole-time medical officers including lady doctors for inspection of children. 112 schools were visited and 35,051 children examined. 18 · 1 per cent. were found defective. The two school clinics in Hyderabad city treated 14,629 students for minor ailments with Specialist treatment when needed. 31 poor students received free supply of glasses after correction of defective vision.

Each of the four divisions of Bihar State have Medical Officers for school inspection with a lady doctor for girl students. 14.8 per cent. were found defective of the 6,126 examined in 70 schools during the year. Malnutrition, enlarged tonsils, enlarged spleen and dental caries were the main defects. Defects in environmental sanitation were brought to the notice of the school authorities.

Andhra State had under consideration a restricted scheme of inspection, that is, inspection in the cities where facilities for treatment and follow-up were possible.

No school health inspection could be taken up in Rajasthan due to financial stringency.

A dental survey of students was a special feature of this year's medical inspection in Himachal Pradesh, defects were corrected and students given free treatment.

There was no special health service for schools in Bilaspur but inspections were conducted as far as possible. Much the same was the case in Vindhya Pradesh.

Health authorities of Saurashtra took a step towards establishing a school health service. They put up four camps to train school teachers in health matters and provided each school with an emergency first-aid box and literature, as to how it should be used.

School children in Kutch could be examined only in some of the institutions as there was no school health service. As a step towards remedying malnutrition, a widely prevalent defect in school children, the State started a scheme for supplementary feeding since March 1933, which continued throughout the year.

In the Andaman and Nicobar Islands, out of 456 high school children examined during the year, 259 were found having enlarged tonsils, dental caries, and pediculosis.

Industrial and Social Health

The industrial workers in India constitute about 1 per cent of the total population.

With the implementation of the State Insurance Schemes in some of the States, the responsibility for providing medical care while in employment and maternity benefit has devolved on the State Governments in co-operation with the Employees State Insurance Corporation. This scheme is implemented in Delhi, Kanpur and in seven industrial centres of Punjab, thereby covering 1,52,000 employees.

The Industrial Hygiene sections of State Health Directorates functioned in West Bengal, Uttar Pradesh, Punjab, Andhra, Bihar, Bombay, Madras, Hyderabad, Vindhya Pradesh and Himachal Pradesh.

Assistant Directors of Health and Medical Officers of Health in States carried out inspections of factories, mines, and eating establishments, reporting shortcomings to Chief Inspectors of Factories and other authorities for suitable action.

Dust samples, temperature readings, air movement readings and investigation into the lead hazards and the prevention of industrial accidents were some of the activities undertaken. Stress was laid on environmental sanitation.

A prelinminary survey to introduce the State Employees Insurance Act in the cities of Hyderabad and Secunderabad was conducted during the year.

Coffee estates and other plantation owners carried out anti-malaria measures at their own expense, guided by the Health Department on technical matters. Though general health improved, malnutrition was marked among employees from Tamil districts working in Coorg.

The labour employed in forest camps on the Islands of Andaman and Nicobar did not have facilities for growing or buying fresh food. Their general health was below par.

Medical inspection of factory workers was occasionally conducted in Kutch, while Tripura, having very little industrial activity, the Public Health Department performed the functions whenever necessary.

Health of Prisoners

Statistics on the health of prisoners are of interest because they are based on accurate diagonsis of ailments and causes of deaths, unlike the statistics of rural areas, where such facilities and trained personnel are lacking.

The following pages will describe the housing conditions, environmental sanitation, diet and recreation which form part and parcel of the programme for maintaining the good health of prisoners.

Assuming that over-crowding up to 20 per cent is moderate and any thing in excess as gross over-crowding, it will be seen that there was heavy over-crowding in the jails of Punjab and Andhra, and moderate overcrowding in Assam, Bihar, Bombay and Madras, the situation being easier in other States. In Table 25 figures give an overall picture, and not of individual jails. For instance, in West Bengal the situation eased further and the number of prisoners per 100 units decreased from 97 in 1952 to 91 during the year under report. Authorised accommodation decreased in Assam, Uttar Pradesh, Hyderabad and Madhya Bharat on the closure of some temporary jails. The average daily population increased in Assam, Bombay, Madras, Punjab, Uttar Pradesh, Rajasthan and Mysore. Congestion was due mainly to the influx of undertrial prisoners and their detention for a long time. To overcome congestion, Governments adopted one or more of the following measures: (1) transferring of prisoners to other jails under the jurisdiction of the same court of trial, (2) speedy disposal of cases, (3) release of undertrial prisoners on bail, as far as possible, (4) remission of sentence and release before serving full sentence, (5) expansion of some jails, and (6) construction of temporary jails.

As already stated, each case of sickness in jail receives proper diagnostic and treatment facilities and all the ailments are generally correctly classified. It is observed that sickness due to malaria was the highest in all the States except Assam, Madras, Hyderabad, Pepsu, Tranvancore-

Cochin and Tripura. In the latter States, dysentery took the first place and next in importance was the respiratory group of diseases. Cholera was conspicuous by its absence in most States, only a negligible percentage being reported from Assam (·04), Uttar Pradesh (·04), Punjab (·02), West Bengal (·06), and Bihar (·01). The heavy malaria rate was due to many prisoners suffering from malaria before entering jails. The same would be true of tuberculosis. The low percentage of smallpox and cholera cases was due to efficient precautions being taken: almost all new prisoners being vaccinated against smallpox and inoculated against cholera. As far as possible, cases of tuberculosis were isolated for treatment, and, in cases of discharge or death, the premises were disinfected.

In table 26 is shown the case fatality rate (deaths per 100 hospital admission). It will be noticed that the pulmonary tuberculosis fatality rate is the highest in almost all the States, with pneumonia next in position. Other respiratory diseases and diarrhoeas are almost equally important causes.

Hospital admission rates per thousand of average daily strength and the constantly sick rates are tabulated in table 27.

The former is an index of the incidence of sickness, and the latter that of prevalence of sickness in the jail population. Hospitalization rate during the year 1953 increased in Assam, Bihar, Madhya Pradesh, Madras, and Hyderabad, while it decreased in Bombay, Orissa, Punjab and Uttar Pradesh, remaining more or less constant in West Bengal, Madhya Bharat, Mysore and Kutch. Comparative figures for the remaining States are not available. The sick rate increased in Assam and Hyderabad but remained more or less unchanged in Bihar, Madhya Pradesh, Madras, Orissa and Uttar Pradesh.

Increase or decrease in weight was generally interpreted as improvement or otherwise. All prisoners were weighed routinely every month. Table 28 shows the percentage of prisoners who gained in weight. It will be noticed that only a very small percentage lost weight despite sickness. The percentage that gained weight was the highest in Kutch (84) and lowest in Bombay (24). The percentage not showing change in weight was 64 in Bombay, the highest, and 8 in Kutch, the lowest. About 10% prisoners deteriorated in health while serving their sentences.

As stated earlier, malaria and dysentery, are the two main causes of illness. Consequently, anti-malaria measures, environmental sanitation and supply of safe drinking water, the three important measures, were taken to safeguard health and prevent illness. Vigorous anti-malaria measures were taken in the malaria areas of Uttar Pradesh, West Bengal and Madhya Pradesh. General sanitation in all jails was good. Hand pumps were provided in Uttar Pradesh jails for improving the water supply. Hospital barracks of two jails in this State were re-roofed. Almost all jails of Madras State were connected to the Municipal water supply. Samples of water were tested at the Public Health laboratory to ensure purity and wholesomeness.

Facilities for recreation were available in some States like Uttar Pradesh and Ajmer. Wrestling, Kabadi, popular outdoor games and physical training were conducted in the prisons of Uttar Pradesh. West Bengal considered measures for the improvement of mind and body by

a reading libarary, book facilities in regional languages, film shows, and religious instruction was given. In Ajmer, prisoners played games, such as Kabbadi, volley ball and wrestling; a prisoners' co-operative canteen has been opened to enable them to purchase permissible articles or to supplement the diet. Maintenance allowance was increased in the States of Ajmer and Orissa.

Fairs and Festivals

The number of fairs and festivals held in various States detailed in the table, though not exhaustive or complete, reveal the gigantic problems the Public Health Departments have to face every year. The exact number attending is not always known except in a State like Bombay, which levies a toll tax on each visitor. The number of such fairs vary from place to place and congregations on such occasions may be anywhere from a few hundreds to a few lakhs.

Table giving the number of Fairs held in States

State	Number of Fairs	
Andhra	40	
Bihar	8	Major and several minor ones.
Bombay	3	Major and 19 minor ones.
Orissa	1	Major and several minor ones.
Vindhya Pradesh	3	Major and 26 minor.
West Bengal	3	Major
Pepsu	4	Major
Rajasthan	3	
Madras	650	
Madhya Bharat	80	

Table showing the number of Vaccinations performed, attack cases and deaths at Festivals

State	Vaccinations			Cases			Deaths		
	Cholera	Plague	Small-pox	Cho-lera	Pla-gue	Small-pox	Cho-lera	Plague	Small-pox
Bombay	114,792	..	..	126	..	..	18	..	..
Orissa	139,624	..	..	..	..	..	..	..	..
West Bengal	103,830	..	94,472	14	..	..	3	81	..

Public Health Departments of States, make extensive arrangements on such occasions as a matter of routine, and the efficiency and effectiveness of such measures depend on the resources available. The usual steps taken include mass inoculation against cholera and vaccination against smallpox, protection of water supply and disinfection of existing sources of water at the fairs and enroute; and protection of cooked food from contamination. At large fairs, temporary infectious diseases hospitals are set up for isolation. If some infectious disease is already prevalent in an area, restrictions are imposed on the holding of fairs in that locality.

In the States of Andhra, Assam, Bihar, Madhya Pradesh, Orissa, Uttar Pradesh, Coorg, Himachal Pradesh, Kutch, Vindhya Pradesh, Rajasthan, and Bhopal, the fairs and festivals passed off without any epidemic. No State Government had to ban any mela or impose restrictions on account of an epidemic. There was an outbreak of cholera at Ashdi fair in Sholapur district of Bombay State, where 126 cases and 18 deaths were reported. To check further spread, 62 per cent visitors were given anti-cholera inoculations and a temporary infectious diseases hospital was opened. Cholera broke out at the Sagar mela and the Chaitra festivals held in West Bengal; 14 cases and 3 deaths were reported. Inoculation against cholera and vaccination against smallpox were carried out by Public Health staff. The Health Authorities made adequate sanitation arrangements in collaboration with the local authorities. In Orissa, a bacteriological laboratory was attached to the infectious diseases hospital at Puri during the Car festival. Some of the States like Himachal Pradesh, Bihar and Madras utilised the occasion for health propaganda through audio-visual aids.

Nutrition

A brief account on the activities in the field of nutrition in the States of Bhopal, Bihar, Bombay, Hyderabad, Madhya Pradesh, Madras, Mysore, Punjab, Uttar Pradesh and West Bengal is given below.

Diet Surveys by the Weighment method were conducted mostly in the Community Project Areas of Ranchi (Bihar), Humagoan village (Bombay), Gungavati and Munirabad (Hyderabad), in the labour colony of Raigarh Jute Mills (Madhya Pradesh) and at the Madras State Poonamallee Health Unit, the Scholavandan Nutrition Unit and the Regional Nutritional Unit, Anantapur. Such surveys were also undertaken in Taka Anukalan and among the families of the Galancy Medical College Hospital, Punjab, and among the East Pakistan Displaced families residing in the refugee camps in Uttar Pradesh. These surveys revealed the absence of protective foods, as milk and milk products, pulses and beans, vitamins and proteins.

Nutrition Surveys by the Rapid Nutritional Survey Method, showed mostly in the children, skeletal deformities suggestive of past rickets, mild anaemia and nutritional deficiencies due to lack of balanced diet, and vitamins A and B.

Ameliorative measures by planned distribution to the vulnerable group of skim milk powder, vitamin and iron tablets were carried out chiefly through the M. & C. H. W. Centres. Free midday meals were

supplied by the State of Madras and the State of Uttar Pradesh to school children. Mysore State took measures to treat hookworm and roundworm diseases while Punjab issued potassium iodide as a prophylactive measure against goitre.

Investigations into the prevalence of epidemic dropsy in Bihar and Bombay and the incidence of urinary calculi in Mehsana district (Bombay) were continuing. Food samples were analysed to assess their fitness for human consumption and research work conducted to determine the effect of Vitamin A in flourine intoxication and the percentage loss of vitamins in cooking. Studies on the relationship between nutrition and toxaemias of pregnancy were in progress at the Women and Children Hospital, Egmore, Madras. Consumer trials with food yeast mixed with popular dishes, showed that half an ounce of food yeast per day could be consumed without adversely affecting the flavour or taste of dishes. Education and publicity propaganda on nutrition and foods were best made during the actual investigations, through the medium of Gram Sewaks, sanitary inspectors and other medical personnel Press, radio, exhibitions and palys were made use of.

Six candidates qualified for the diploma in Nutrition and two others for the certificate in Nutrition during the year from the All India Institute of Hygiene and Public Health, Calcutta.

Adulteration of Food

The Orissa Prevention and Control of Sale of Food Act, 1938, formerly applicable to certain urban areas, was enforced throughout the State of Orissa with effect from 28th September, 1953. The Uttar Pradesh Prevention of Food Adulteration Act, which was in force since 1914 and covered most of the municipal town and cantonment areas, and a large number of villages was superseded by the Uttar Pradesh Food Act, 1950 on January 26th, 1953. The Punjab Pure Food Act, as amended in 1951, was applicable also to Ajmer since 1950, to Bilaspur State since 1952 and the entire State of Himachal Pradesh in 1953. Under this Act, rules were framed making a licence necessary for the sale of milk and milk products, hydrogenated oil, etc. There was no Pure Food Act in operation in Rajasthan for the State as such, but, the covenanted States of Rajasthan had their own laws. Separate measures for Travancore and Cochin continued to be applicable to the respective territories. Patiala Pure Food Act of 1951 was applicable to all areas in Pepsu since July, 1951.

In most States, the Director of Public Health or the Director of Health Services is the administering authority for a Food Act, Sanitary inspectors and medical officers are given powers of food inspectors. Some Punjab and Travancore municipalities have their own inspectors.

The enforcement of Food Adulteration Act in any State requires a laboratory and a public analyst to examine food samples. A Public Health Analyst is usually an employee of a State Government. Local bodies and private parties also send food samples for analysis. At some places, they have to pay for the service, as for instance in Punjab. The following table shows the number of samples of food stuffs examined during the year with the latter expressed as percentage of former. The information is available for 4 States only.

State	No. of samples taken	No. of adulterated samples	Percentage adulterated
Andhra	18,252	8,187	14·9
Bihar	2,581	395	15·3
Orissa	1,208	286	23·7
Uttar Pradesh	25,063	26	0·1

Inspite of legislative provisions, it has been possible to control the evil of adulteration only partially and some improvement is noted. The following are some of the factors militating against complete checking.

(i) In most cases, while the Act is in force in one area, the adjoining areas do not come within its ambit. The situation can only improve by extending the Act to all the areas. This has been done in some of the States during the year

(ii) In a large majority of cases the public health staff and medical officers had to perform duties of food inspectors in addition to their own and could not therefore, devote sufficient attention and time for their work. There were only a few whole time food inspectors.

(iii) Legal action taken under the Act is not stringent enough as punishment meted out is mild. Only in some States like Punjab and Pepsu is the application of legal measures drastic enough. In other States, for example, Bombay, offenders could escape punishment because of loopholes in the Act or because of some legal technicalities. Comprehensive modifications to rules framed under the Act would facilitate appropriate action.

(iv) The fact that adulteration cannot be easily detected in articles like ghee, etc., enabled the dealer to dupe the common man, easily. The common adulterants are water and separated milk in case of milk, vegetable oil in ghee, minerals and organic matter or other substances mixed with tea leaves, and mineral oil for coconut oil. To detect adulteration, experiments are being conducted in various States since 1952, *vide* tables 29 and 30.

Railway Health Service

Each railway system in India has its own medical and Public Health Organisation which serves the needs of its staff and attends to sanitation and other allied public health matters at railway stations and railway colonies. Below is a brief account of such activities in the year 1953.

Medical Facilities.—All railway systems have well-equipped hospitals and dispensaries, some of which have arrangements for X-Ray and employ advanced methods of treatment. The railways, except the Eastern Railway, do not have Tuberculosis clinics or sanatoria meant exclusively

for their staff; but they have reserved beds, in nearby public sanatoria. Such beds are, however, inadequate in number. The Eastern Railway established 7 tuberculosis, clinics in different localities. The Railway Board has agreed to make treatment arrangements by putting up additional buildings at some of the existing sanatoria. An Eastern Railway committee, appointed for the purpose, recommended the provision of a hospital of 24 beds at the K. S. Ray T.B. Hospital, at Jadabpur, Calcutta and an annexe of 24 beds at Tambaram Sanatorium, Madras. The recommendation has been accepted.

Cash grants were given from the Staff Benefit Fund for treatment to the low-paid staff suffering from tuberculosis.

For effective control of tuberculosis among the railway employees, the Railway Board decided that a physical fitness examination of recruits should include a chest X-Ray examination, a tuberculin test and prophylactic BCG vaccination. The Eastern and the Central Railways have taken steps to implement this.

Each railway has maintained a number of centres in most cases for maternity and child welfare work with grants from the Staff Benefit Fund.

It also financed the Eastern Railway Eye clinic opened at Bilaspur as an experimental measure. Three organisations gave assistance to low paid staff for purchase of glasses.

Apart from providing staff the treatment facilities, the railway authorities and in co-operation with local civil and military authorities, take preventive measures as a matter of routine. On special occasions such fairs and festivals they take extra precautions, as large numbers of people are attracted to these melas which tend to upset all normal public health arrangements on railways.

Malaria control measures undertaken were the anti larval, and anti-mosquito; personal protection, and drug prophylaxis. The North-Eastern Railway authorities paid special attention to the endemic area of the "Terrai Belt" where malaria was kept under control by the systematic prophylactic distribution of paludrine to their staff. In the Assam area of this railway, control work was supervised by a fully qualified malarialogist. In those endemic areas; where the number of railway employees was too small to justify extensive anti-malaria activity, only seasonal suppressive treatment was given. Other anti-malaria measures adopted particularly by the Central Railways include (1) removal of rank vegetation, (2) canalisation of drains and filling in of pits and depressions, and (3) laying on of oil films on mosquito breeding swamps.

Four more dental clinics were opened by this railway during 1953 bringing the total to 11. Information regarding the special facilities on other railways is lacking. The Southern Railway experienced some difficulty in getting medical personnel of subordinate grades.

The total number of cases treated by railway medical institutions was about 25 per cent. more than last year. The major increase occurred in the groups of causes of sickness other than cholera, smallpox and malaria. The total number had more than doubled on the North-Eastern Railway

and the Central Railway. No major epidemic was reported within the jurisdiction of the Northern, the Central, and the Western Railways. Cholera was prevalent in an epidemic form in some civil districts along the Southern Railway. Extensive floods in North Bihar were responsible for increased incidence of malaria in one district of the North-Eastern Railways. On the whole, the incidence of cholera and smallpox among the railway staff was slight. There was no plague during the year. Cases of malaria increased slightly on the Northern, the Central and the Western Railways and decreased on the remaining. The Railway Hospital at Ferozepore Cantt. is affiliated as a training Institution for training of nurses. Medical stores were usually obtained from the Government Medical Stores Depot and additional quantities purchased in the open market, when not available.

The Eastern Railway reported increased incidence of typhoid.

Cases of deficiency disease particularly reported by the Southern Railway so far, significantly decreased in number probably owing to improvement in the food situation in general.

A very great increase occurred in the total number of injuries in railway workshops.

The responsibility for sanitation is shared between the medical, the public traffic and the Engineering departments of railways. At all large railway stations, or where there is a railway hospital or a dispensary, the medical department took charge of these measures directly or through local sanitation committees which are similar to municipal bodies. The cleanliness of important station premises and yards was looked after by the public health Department while at the smaller stations it was the traffic department, that is, the station masters, who took the responsibility. Smaller stations were visited by trained sanitary inspectors every three months and their recommendations were passed on to the Traffic Superintendent for the guidance of station masters. The Eastern Railway authorities deputed a special officer to examine the sanitary conditions and if necessary, recommend specific measures. Sanitation on the Southern Railway is looked after by sanitary councils operating under the Engineering Department. On the whole, the sanitation of railway stations and railway colonies was satisfactory. A sanitation week was observed at some stations and intensive propaganda was done through the medium of posters, talks, etc. A Medical Book Club on the Eastern Railway is available to the staff. A scheme prepared by the Eastern Railway for training non-gazetted medical officers was approved by the Railway Board. It envisages a programme of higher training for suitable staff at recognised institutions all over India.

On the North-Eastern Railway, the supply of drinking water is from wells, taps, hydrants, deep tube wells, pumps and ground tanks. In the Assam zone of this railway, Patterson filters and jewel filters are in use at some wayside stations. On the Northern Railway, the source of water supply is tube wells at bigger stations, and shallow wells at smaller stations. The supply was satisfactory at all the railway stations and railway colonies during the year. Sources of water are chlorinated. The Central Railway arranged for the cleanliness of wells and tanks through their engineering department. It provided cool drinking water to passengers

at a number of stations and hospitals. Samples of water are chemically and bacteriologically checked in the Laboratories.

In order to ensure wholesomeness of food, both for passengers and staff, food stalls are regularly inspected by the railway medical and health staff and the persons handling food stuffs are subjected to periodical medical examination to ensure that they are neither carriers nor infected by a communicable disease. The North-Eastern Railway have authorized the local public health authorities to examine the railway staff. Some of the railway doctors at larger stations of the Northern Railway have been delegated powers of food inspectors by the Director of Health Services, Punjab, under the Punjab Pure Food Act. The Uttar Pradesh Pure Food Act was in force on that section of the Central Railway.

Health propaganda, training in first aid to certain categories of staff, and maintaining the St. John Ambulance Brigade are some more of the activities carried out by the Railways. Table Nos. 31-32-33 in the Appendix show the number of medical institutions, staff employed and the immunisations during the year under review.

Health Education

A Central Health Education Scheme has been sanctioned. This envisages the establishment of a Central Health Education Bureau.

The two mobile publicity vans presented to the Government of India and two more purchased by this Directorate were transferred to the States of Bhopal, Delhi and Calcutta (one each for the Singur Health Unit and the All India Institute of Hygiene and Public Health). Films from the Film Library of the Central Health Education Bureau were exhibited by the States during fairs and festivals.

Posters and folders depicting health subjects in language appealing to the common man were distributed.

Health propaganda continued to be carried out in urban and rural areas by municipal and district public health staff with the help of magic lantern slides, playing of gramophone records and enacting of popular plays. The importance of preventive vaccination against smallpox, cholera, typhoid and other diseases and the need for a higher standard of sanitation were stressed.

The World Health Day was celebrated in most States with the State Medical Departments co-operating.

CHAPTER IV

MEDICAL RELIEF

Hospitals and Dispensaries:

The total *number of hospitals and dispensaries in 1953 was 9,600, of which 6,394 were located in the rural areas. The number of indoor and outdoor patients treated in hospitals and dispensaries was 35,46,700 and 11,33,22,835 respectively. Expenditure incurred by the State Governments on medical relief amounted to Rupees 21,59,07,595. The amount of grants-in-aid to hospitals and dispensaries in 1953 was Rs. 1,16,51,590. The total number of hospital beds was 1,26,628.

The Administrative control and maintenance of 34 hospitals and dispensaries was taken over from the Local Bodies by various State Governments.

A brief account of medical relief facilities and the working of hospitals and dispensaries in different States during 1953 is detailed by tables in Appendix.

Andhra: All medical institutions public, private, mission and municipal, worked satisfactorily. In some of the taluq headquarter hospitals the new wards were provided with electricity, and the bed strength raised.

The King Georges' Hospital at Visakhapatnam a teaching hospital attached to the Andhra Medical College, Visakhapatnam, affords teaching facilities for under-graduate and post-graduate study leading to the specialist degrees and diploma courses. The bed-strength of the hospital was increased from 700 to 796. It also trained pupil nurses, pupil midwives, pupil compounders and X-Ray dark-room assistants.

A mobile medical unit functioning in the district of Cuddapah assisted in famine relief work and in times of epidemics. A temporary malnutrition ward of 50 beds was erected with the necessary staff in the district headquarter hospital at Cuddapah.

The Government headquarter hospital at Eluru was shifted to its new buildings. Two semi-permanent wards in the Government headquarter hospital, Kakinada, with 24 beds each, were constructed in 1953.

A children's ward of six beds was constructed in Krishna out of private donation. The District headquarter hospital, Nellore had a children's ward of 12 beds donated. A maternity ward of 8 beds was constructed at the Government Hospital, Rajampet.

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*For want of figures for the year 1953 from U. P., Orissa, Travancore-Cochin, Jammu and Kashmir and Ajmer, figures for 1952 have been included.

Assam: The State hospitals and dispensaries lacked adequate equipment and State Government was taking steps to improve the position.

The Public Health Department continued its work on malaria, kala-zar, hookworm, etc., through mobile dispensaries, in the rural areas.

Bihar: Eleven new dispensaries were opened during the year and a State grant totalling Rs. 1½ lakhs was distributed to the sub-divisional Hospitals and a sum of Rs. 1,00,000 to the District Board dispensaries collected from donation, etc. A State subsidy of Rs. 600 a year was made to each dispensary.

Not all the hospitals and dispensaries were well equipped specially in regard to appliances and medical supplies. Grants totalling Rs. 1,15,000/- were, therefore, given to certain institutions.

Bombay: Most of the medical institutions in the State were fairly well-equipped with modern appliances and instruments, including X-Ray plants. In many, there were special departments for venereal diseases, tuberculosis and skin and those for eye, ear, nose and throat and maternity. All departments worked satisfactorily. An appraisal of the working of hospitals and dispensaries in the State showed steady progress.

A new ward of 42 beds was opened in November, 1953 for neurosurgical and psychiatric cases at the King Edward Memorial Hospital, Parel, Bombay (a hospital under the Municipal Corporation of Bombay).

Madhya Pradesh: Government hospitals and dispensaries managed by the Dispensary Fund Committee were tolerably well equipped, but very few hospitals had X Ray apparatus. Dispensaries and medical institutions managed by the Local Bodies were poorly stocked with medicines, etc., on account of meagre funds.

Government have agreed, in principle, to take over directly all the district headquarter hospitals at the rate of three hospitals per year. Accordingly, the hospitals at Akola, Bilaspur and Khandwa were taken over during the year under report. Construction work on buildings of the Medical College and Hospital, Nagpur, was completed during the year 1953. Maternity and tuberculosis wards and maternity homes were also constructed in the year 1953

Madras: All the hospitals and almost all the district headquarter hospitals were well equipped throughout the year.

A new Nurses Home attached to the Government General Hospital, Madras, at an estimated cost of Rs. 27·74 lakhs, was under construction as also a new hospital at Tuticorin, Tirunelveli district at a cost of Rs. 16 lakhs. A number of new wards were added to several hospitals.

Punjab: Hospitals and dispensaries in the State were deficient in equipment and medicines. A sum of Rs. 4,27,000 was, therefore, sanctioned by Government during the year 1953-54 for the expenditure on medicines, diet for hospital patients, equipment, etc.

Management of medical institutions under the Local Bodies (District and Municipal Boards) remained far from satisfactory, paucity of funds being the main cause. The State Government, therefore, decided to provincialize all the rural dispensaries in the course of the next three years.

Twenty-two new hospitals and dispensaries were opened during the year. The procedure regarding the appointment of suitable medical officers trained in clinical laboratory procedures, blood transfusion, X-Ray work and anaesthesia was continued. Doctors so trained were posted at each district headquarter hospital at Jullundur, Karnal and Ambala.

Of 176 rural dispensaries under local bodies, 79 were taken over by Government by the end of 1953. Liberal grants, were made by the State Government to various Local Bodies and Missionary Societies for specific purposes over and above the normal maintenance grants.

A venereal diseases team continued to function in the rural areas of Kulu, district Kangra, and Morni Hills in Ambala district.

West Bengal. The permanent State hospitals were fairly well equipped. 32 Health Centres with 130 beds were opened in different parts of the State, while the under-mentioned State and private hospitals, etc. were closed, namely:

1. 9 A.G. and F.R.E. Hospitals with 130 beds;
2. A private hospital with 20 beds, and
3. A State hospital with 11 beds.

A 200 bedded hospital at Tollygunge, Calcutta was opened with the Government taking over the old Prince Gulam Mohammed Hospital in the year 1953. Construction work on a permanent Infectious Diseases Hospital at Beliaghata was in progress. 28 Maternity and Nursing Homes were registered under the West Bengal Clinical Establishment Act, 1950.

Hyderabad. During the year under report, all the hospitals and dispensaries were well equipped. Five additional dispensaries and the Niloufer Hospital for women and children were opened. Eleven Maternity wards, and buildings for dispensaries were constructed during 1953.

Madhya Bharat. At the commencement of 1953, there were 598 medical institutions all over the State. 21 new institutions were opened during the year, and 28 dispensaries belonging to old Jagirs were taken over by the Government.

Extra quantities of medicines and food were supplied to the medical institutions operating in famine-stricken and Adivasi populated regions.

The following new works were undertaken during the year under report:

1. A 50-bedded tuberculosis Hospital at Ratlam;
2. The addition of a 12-bedded ward to the Civil Hospital Jaora, district Ratlam;
3. The construction of a ward for in-patients at the Civil Dispensary, Thandla, District Jhabua; and
4. The allotment of 4 rooms of the old Police Line (Ratlam) to the Civil Dispensary Dhamnod, district Ratlam, for the use of in-patients.

Hospitals and dispensaries were equipped with X-Ray and laboratory facilities at 25 district and main civil hospitals.

Mysore.—Within the limits of available funds, hospitals and dispensaries in the State were fairly well-equipped. At the end of 1952 there were 491 medical institutions and 12 new institutions were opened and 2 closed in 1953. The seven Kannada speaking taluks of Bellary district, formerly part of Madras State, were integrated with Mysore State and its 25 medical institutions came under the administrative control of the Mysore Medical Department. However, the number of hospitals and dispensaries in the State at the end of 1953 rose to 526, which gave an average of one institution for every 63·3 square miles of area and for a population of 18,724 as compared with 60·1 and 18·602 respectively, at the end of 1952.

The number of beds for tuberculosis and maternity cases showed an increase respectively of 300 and 600.

Pepsu.—A new hospital was opened at Nalagarh on 1th November, 1953.

Rajasthan.—The hospitals and dispensaries in the State were on the average, well equipped. There was need for more surgical equipment and trained technical staff.

13 hospitals and aid-posts were opened during the period under review. Hospital Visting Committees nominated by the State Government for the large hospitals visited the hospitals and suggested ways and means to improve the services. A number of new buildings and wards for hospitals were constructed.

Saurashtra.—Extra accommodation of 110 beds at a cost of Rs 3·7 lakhs was provided in two hospitals in April 1953.

Bhopal.—Hospitals and dispensaries in the State were not well equipped and hence equipment worth Rs. 80,000 was purchased during the year.

A new dispensary was opened at Doraha, and the dispensary at Barcli was provided with 10 beds.

Coorg.—Most of the District Board hospitals with inpatient accommodation have no dieting facilities. This defect could not be remedied for want of funds.

All District Board hospitals and dispensaries were taken over by Government on 1st April, 1953.

A maternity ward at Sanivaranthe, Siddapur with accommodation for 10 patients was completed. Another hospital of 10 beds was opened at Madapur.

Delhi.—All the hospitals and dispensaries in this State functioned under considerable strain throughout the year under review, the existing staff and accommodation being inadequate to meet the greatly increased demand for medical aid owing to continued rapid increase of population.

Himachal Pradesh.—Medical institutions in the State were improved by providing adequate supplies of medicines, replacement of unserviceable equipment and furniture.

Kutch.—Hospitals and dispensaries in the State were lacking in equipment and furniture. The deficiency was partly made good.

Manipur.—The hospitals and dispensaries of the State are being equipped in stages.

The Civil Hospital at Imphal, the largest in the State has facilities for survey, laboratory work and X-ray. Difficult cases from outlying areas are referred to it.

In order to ensure better medical help in the hilly regions where population is sparse and communications poor, drugs worth Rs. 10,000 were distributed with instruction charts for guidance.

Eleven new dispensaries were opened. The public constructed 10 dispensaries and staff quarters as per approved design, with a subsidy of Rs. 19,000 from the Government. Five pucca sheds were constructed at a cost of Rs. 22,000 to accommodate 30 patients. A living quarter for compounder, a ward for segregating healthy children of leprosy patients, one leprosy ward in the Hill areas and five pucca sheds for leprosy patients were constructed by the State during 1953. One 10-bedded hospital was constructed at Thoubal in the Community Project area.

Tripura.—Hospitals and dispensaries in the State were well-equipped within its budget provision.

Two primary health centres and two dispensaries were opened and 16 dispensaries taken over from the Rehabilitation Department.

Vindhya Pradesh—Work has been fairly satisfactory during the year. Eight travelling dispensaries, each under a Medical Officer provided medical aid in remote areas.

Schemes are under consideration of the Government for the construction of Class I type buildings for district hospitals at Tikamgarh and Shahdol.

Andaman and Nicobar Islands.—Hospitals and dispensaries were moderately well-equipped. Three new dispensaries were opened during the year under review, with one in the Refugee settlement area.

The Cellular Jail Gate building has been converted to serve as Surgical and Women block thus providing more accommodation. The operation theatre has also been moved into the block.

Vide Tables 34, 35 & 36 in Appendix.

Contributory Health Service Scheme for Government employees in Delhi and New Delhi

The existing system of concessions, does not provide satisfactory medical service to Government employees. A scheme for Government employees has accordingly been formulated. It will be confined to Delhi alone, where is the largest concentration of Central Government officials.

Specialists for ear, nose, throat, eye and teeth and lady doctors for women and children will be appointed. Dispensaries will be established at suitable places with institutional treatment at the Safdarjung Hospital and the Willingdon Hospital and Nursing Home, New Delhi. The scheme is likely to be introduced in early 1954. A monthly contribution on a graded scale will be charged for the improved service.

Displaced Persons Medical Relief

The medical and public health facilities at the Relief Camp Hospital, Yol continued to be under the Union Ministry of Health upto 31st August 1953 when the Camp was closed down. A fifty-bed hospital functioned at the Camp till the end of June 1953.

Bihar.—The Brambhev Relief Camp was opened for displaced persons in March, 1953. The Relief Hospital functioned in the district of Purnea.

Bombay.—At the commencement of the year 1953, there were 19 colony dispensaries in the State with 391 beds. Health conditions and sanitation in all the colonies were satisfactory, due to an adequate medical and sanitary staff maintained throughout the year. Facilities were extended to tuberculosis patients in the Central Hospital, Kalyan Camp No. 3 and the Hospital for Diseases of Chest, Camp Aundh, Poona. The UNICEF Milk Distribution Scheme to children and expectant mothers was continued throughout the year.

Punjab.—Eight hospitals and 6 outdoor dispensaries functioned during the year under report. Adequate treatment was given to tuberculosis patients at the Tuberculosis Hospital, Chetru which has a provision for 300 beds. There were 19 mud-hut colonies with sanitary arrangements. No epidemic or serious infectious disease, such as, cholera, smallpox or plague occurred in any of these colonies during the year under review as all the displaced persons residing in them received protective inoculations and vaccinations from time to time.

West Bengal.—During the year under report, 24 Relief Camp hospitals and dispensaries gave medical aid to the sick of Relief Camps. In addition to these, mobile medical Units were posted in different camps to combat the spread of communicable diseases or out-breaks of cholera and smallpox.

Pepsu.—A hospital at Tripuri was opened to give medical relief to displaced persons.

Rajasthan.—Displaced persons were given facilities in State general hospitals and dispensaries with beds reserved for them. 35 beds in Durgapura Tuberculosis Sanatorium were also reserved for displaced persons. The Sanganer and Amber (Near Jaipur) Home were under the control of medical officers in-charge of dispensaries.

Saurashtra.—A separate temporary hospital of 50 beds for displaced tuberculosis patients has been opened at Bantwa. Eight seats for training displaced women in nursing have been reserved at Jamnagar Nursing School. It is a six months' training course for dais at Jamnagar and Bhawanagar.

Bhopal.—The two dispensaries at Gandhinagar and Bairagarh were provided a sum of Rs. 26,600 for the 1953-54 Budget for their continuance.

Manipur.—The two camps in Saiton and Serow Colonies were bi-weekly visited by the Medical Officers of the nearby hospitals.

Tripura.—The Rehabilitation Department is conducting separate medical institutions for displaced persons.

Vindhya Pradesh.—There are two relief camps at Satna and Datia. Both are looked after by the State doctors available at district hospitals nearby.

Andaman and Nicobar Islands.—One dispensary was opened during the year in the Refugee Settlement area.

In the States of Hyderabad, Uttar Pradesh, Mysore, Himachal Pradesh, Assam, Madhya Pradesh, Madras, Andhra and Kutch, there were no special arrangements for medical treatment of displaced persons. They received all the necessary attention at the existing Government hospitals and dispensaries.

X-RAY TREATMENT

X-Ray Treatment.—Facilities for X-Ray diagnosis and treatment are not adequate. The total number of major and minor X-Ray sets available during 1953 in the whole country was 302 and 456, respectively, of which 445 sets were installed in hospitals. This is less than 6 per cent of the total number of hospitals and dispensaries having this facility. (Table 37).

RADIUM TREATMENT

Radium Treatment.—Facilities for radium treatment continued to remain inadequate as in previous years. At the end of 1953, the number of institutions providing radium treatment in the country was 38 only.

The total quantity of radium available in 1953 was 11,403·05 mg. (Table No. 38).

BLOOD TRANSFUSION SERVICE

During the year under report, there was appreciable progress in the extension of blood transfusion service. New centres were set up and activities in existing centres intensified.

Funds were collected for blood transfusion and badges distributed to donors. Blood was mostly collected from convicts and police personnel in Madhya Bharat, Punjab, Assam and Rajasthan. Efforts were made to register students both of schools and colleges and staff of hospitals as blood donors. The "Blood Bank Insurance Scheme" assured free transfusion to a donor or his closest friend within a period of a year.

Committees were formed to popularise blood donation and exhibitions sponsored by municipalities and State Governments were organised, demonstrating the harmlessness of blood donation and its life saving value to patients.

Table 39 details the number of Blood Banks in India and the work carried out during the year.

MENTAL HOSPITALS AND PSYCHIATRIC PROBLEMS OF INDIA

Facilities for institutional treatment of mental cases continued to be inadequate and, mental hospitals all over the country were overcrowded.

The Assam Government installed an electric shock therapy appratus in the mental hospital at Tezpur during the year under report and clinics for mentally handicapped children were opened in the out-patient department of hospitals in Indore and Gwalior. An out-patient psychiatric clinic was opened in the Government General Hospital, Madras. 16 single rooms were constructed in the State Mental Hospital, Waltair in Andhra. There were psychiatric clinics attached to the Medical College Hospital, and the N.S.G. Kar Medical College Hospital, and a mental observation ward at Bhawanipur, all at Calcutta.

Expenditure incurred on all the mental hospitals amounted to over Rs. 116 lakhs in 1953.

Except for a few, the hospitals functioned largely as custodian agencies, and for want of adequate staff, equipment and funds, a high standard of clinical work could not be achieved.

Occupational therapy remained the most important form of treatment. Next in importance was the employment of psychotherapy. Electro-convulsive treatment was confined entirely to the treatment of depression, and rauwolfia serpentina was increasingly used as it was a less drastic form of therapy than shock. Insulin coma treatment was generally considered the most effective treatment for early cases of schizophernia. Other forms of treatment employed were pyretotherapy, surgical measures, and physical culture.

The "Bodhi Peet" (A Home in Calcutta) trains mentally defective children and adults while the Lambini Park Mental Hospital, Calcutta trains mentally defective children only.

Under the inter-dominion arrangements formulated in 1950, all Muslim patients were transferred to the Lahore Mental Hospital (Pakistan), and non-Muslim patients of Punjab, Sind and the North-Western Frontier provinces temporarily lodged in the Lahore Mental Hospital, transferred to the Mental Hospital, Ranchi (India).

At the end of 1953, there were 33 mental hospitals in India with 13,419 patients against the scheduled accommodation of 10,734 beds.

Table No. 40 gives the name and bed-capacity of mental hospitals, the number of patients admitted and the expenditure incurred in 1953.

CHAPTER V

Maternity & Child Welfare

Health Services for Mothers and Children.—During the year under review, Maternity and Child Welfare programmes continued to expand under the State health programmes, Community Development programmes and under other Centrally assisted items of the First Five Year Plan. Voluntary organizations continued their work and a number of institutions received assistance from the Central Social Welfare Board for the expansion of their activities. International Organizations namely, the World Health Organization and the United Nations Children's Mission, continued to assist in furthering the efforts of State Governments to improve and expand the services and to undertake State wide programmes which included training of health personnel and the establishment of model units in an overall health programme. Great emphasis is also being laid on the training of personnel in paediatrics services and for this purpose the State Maternity & Child Health Projects give priority to the training of medical, nursing and ancillary health personnel.

Administrative set up in the State for Maternity and Child Welfare Services.—The States of Bombay, Bihar, Madhya Pradesh, Vindhya Pradesh and Assam created special Bureau for Maternity and Child Welfare and officers with previous training and experience of this work were appointed in Bombay, Bihar and Madhya Pradesh; Maternity and Child Welfar Bureaux formed part of the Health Directorates of the States of Andhra, Assam, Bengal, Bihar, Bombay, Delhi, Himachal Pradesa, Hyderabad, Madhya Pradesh, Madras, Mysore, Orissa, Punjab, Saurashtra, Travancore-Cochin, Uttar Pradesh and Vindhya Pradesh.

A. SERVICES

Maternal Care.- In urban areas, there is great demand for institutional services and the pressure for maternity services on the existing hospitals is heavy. Almost all States provide institutional services in urban areas through Maternity Homes or Maternity Hospitals or through Maternity Wards attached to general hospitals. Institutional services in rural areas are very meagre and the ratio of beds for maternity in rural and urban areas is 2·25. The importance of pre-natal care is increasingly recognised. The majority of the Maternity Hospitals and Maternity Homes as well as Maternity and Child Welfare centres provide pre-natal services and run special clinics for expectant mothers. The number of beds for maternity cases in the States of Bombay, Madras, Madhya Pradesh, Orissa and Bengal is relatively greater than in other States, but none of the States have reached the target of providing 1 bed for 100 births which is accepted as a reasonable standard. For instance, Madras State has 0·38 beds. Uttar Pradesh 0:01, West Bengal 0·06, and Bombay 0·055 per 100 birth. In the remaining States, the provision is still less except for Mysore which has 0·72 beds per 100 birth (Table 43). If the requirements of urban areas only are considered, a large number of States

provide more beds than one per 100 births: they are Bombay 1·2, Madhya Pradesh 1·2, Madras 1·4, Orissa 1·9 and West Bengal 3·0 per 100 births.

The above points to an urgent need for strengthening institutional maternity services in rural areas. In urban areas, however, the institutional services need to be supplemented with domiciliary services so that there is better use of the existing services and the hospitals do not have to carry a heavy load of midwifery service as at present. The demand for beds in most hospitals is so great that sometimes the mothers are sent out 2 to 3 days after delivery. The midwifery services thus need to be so organised to urban areas that the facilities at the maternity hospitals are utilised for dealing with abnormal and difficult cases only, while the maternity homes and small maternity units attend to these normal cases as have no facilities at home.

In rural area, domiciliary midwifery services through Primary Health Centres and Maternity and Child Welfare Centres should be supplemented by providing a certain number of beds, for cases that would need hospitalisation such as those who have unsuitable home conditions, reveal abnormality in the pre-natal period or require skilled care. Greater attention would also be necessary in expending and improving post natal care.

There has been no improvement in the collection of vital data on maternal deaths in rural areas and, therefore, it is difficult to judge whether the maternal care programmes are really effective. In urban areas, the municipal reports indicate a decline in maternal mortality. The rate as recorded in large cities is around 2—Madras 2·1, and Bombay 1·3 per thousand live births. No progress has been made in the establishment of maternal Care Committees in large cities so that neither the causes of maternal mortality can be ascertained nor can measures be adopted to prevent such deaths.

B. INFANT AND CHILD CARE

Approximately 500 Maternity and Child Welfare Centres were established during the year under review, mostly in rural areas of which 417 were in Madras, 23 in Hyderabad and 15 in Punjab. The Centres opened in the previous years continued to be maintained. In rural areas, the Unit consists of one main Centre and two or more sub-Centres serving a population of 60,000. The staff consists of a doctor attached to the Primary Health Centre or the adjoining dispensary which is responsible for medical care, a Health visitor and four midwives. In urban areas, the population served by each Centre is approximately 10,000. In spite of the limited staff, the services include midwifery services and a limited programme of child care to provide health supervision of the child during infancy and the first five years. Minor ailments and early cases of malnutrition are detected and treated. A certain amount of school health work is done in schools in the close vicinity of the centres. Feeding programme on a limited scale is also undertaken. The main emphasis is on instruction of the mother and the family on the value of proper diet, hygiene and care of the child, and on protection against communicable diseases.

The States of Bombay, Madhya Pradesh, Bihar, Travancore-Cochin and Saurashtra, undertook comprehensive maternal and child health programmes with World Health Organization/United Nations' International Children's Emergency Fund assistance. These programmes provide for, (1) the establishment of Maternal and Child Health Bureau in the State Health Directorates so that qualified Maternity and Child Welfare Officers can assist in the planning and administration of these services, (2) the expansion of training facilities for medical and nursing students, health visitors, midwives and dais, and (3) the expansion of domiciliary and institutional services for mothers and children in the form of maternity and children's hospitals and maternity and Child Welfare centres.

The results of the extensive programmes of services for mothers and children are encouraging; infant mortality is showing a steady decline since 1920 and the decline being more steep since 1946.

Expenditure on Maternity and Child Welfare Services.—It is difficult to determine the funds allocated by States for health services for mothers and children since these are included in the general health budgets of the State. It is encouraging to observe that each State is expanding the services, and an increasing amount is being spent each year. The Government of Uttar Pradesh allots funds for domiciliary services for mothers and children to the extent of Rs. 7·3 lakhs annually, Bombay Rs. 3·6 lakhs, Delhi Rs. 1·5 lakhs and Hyderabad Rs. 1·3 lakhs.

Assistance from International Organization.—The United Nations Children's Mission continued to provide assistance to improve the existing services as well to expand the Maternity and Child Health programmes in the States.

The United Nations Children's Emergency Fund provided equipment, drugs and diet supplements to 700 existing Maternity and Child Welfare Centres, assistance to 1,132 new Centres under State programmes and equipment for maternity and child welfare centres under Community Projects and 200 sets of Maternity and Child Health equipment (100 A and 100 B) to the centres established by States in backward areas under Centrally assisted schemes. Thus a total of 1,832 Centres received standard Maternity and Child Health equipment drugs and diet supplements. The Fund also granted $ 10,000 (about Rs. 50,000) for assistance to States for conducting training programme for local training of dais.

The World Health Organization assigned, trained international personnel to the States of Uttar Pradesh, Bihar, West Bengal, Hyderabad and Travancore-Cochin which provided buildings and recurring expenditure for developing the services and additional personnel to work along with the World Health Organization personnel. A bright outlook for Mother and Child Care Programmes is ensured by the Government of India and the States through the First Five Year Plan, and the generous aids from International Organizations. Thus a sound foundation is being laid for the future.

(*Vide* Appendix Table Nos. 41 & 42)

CHAPTER VI

NURSING

General Conditions.—The shortage of trained nurses which continued throughout the year led to many of the sanctioned posts not being filled. Another reason for this shortage was because a good percentage of the nurses and midwives get married after finishing their training and so have responsibilities and are not inclined to move to place where opportunities for employment exist. Apart from this, nurses hesitate to take up service in those States, where the conditions of service are not regarded as satisfactory and adequate residential accommodation is not available. Details of number of nursing staff employed in India and the number of sanctioned posts may be seen at Tables 13 & 14. The number of the registered nurses, midwives etc. and the number estimated to be in actual practice is given in the Table 15.

The number of health visitors is expected to be higher than the actual registered number as the health visitors are not registered in all the States.

Training of Nurses, Midwives, and Health Visitors.—The number of training schools for nurses, midwives, etc., in the year 1953 was as under:—

General Nursing	235
Midwifery	264
Health Visitors	9
Auxiliary Nurses Midwives	11
B. Sc. course in Nursing . .	2

Thus there is an increase of 11 schools for General Nurse training, 27 schools for midwifery, and 9 schools for Auxiliary Nurses Midwifery course since 1952. Table 46.

While there was no dearth of applicants for admission to the training schools in some States and in fact some of the schools have a list of candidates waiting for admission, there is a shortage of candidates in some other States due to non-availability of women students with the required educational qualifications. Further, in many of the schools the students are not provided adequate or suitable residential accommodation. The State Governments and the Government of India have drawn up plans and programmes for expanding the existing training facilities to make up for the shortage of trained staff. Some international agencies such as world Health Organization, United Nations' International Childrens' Emergency Fund, Technical Co-operation Mission, etc., assisted in giving technical help to the Governments at the Centre and the States.

Training Abroad.—Eight nurses with scholarships from Technical Co-operation Mission, World Health Organization or Colombo Plan left for foreign countries for post-graduate training. 19 nurses returned after completion of studies abroad, 9 having taken basic training in nursing in the United Kingdom. Some candidates have gone abroad at their own expense to take the basic course in nursing. Table No. 17.

B.Sc. Course in Nursing & Post-Graduate Training.—Courses of training leading upto the B.Sc. degree in Nursing and Post-Graduate courses continued to be given in the College of Nursing, New Delhi, the Christian Medical College & Hospital, Vellore, and the Government General Hospital, Madras. The number of students admitted and qualified in these courses in 1953 is shown. Table 18.

A post-certificate course in Public Health Nursing started in 1953 at the All India Institute of Hygiene and Public Health, Calcutta, with eleven students. The course is of one year's duration and candidates must be qualified nurses and midwives. This course trains them for work in a generalised public health programme.

Three Refresher Courses for Nursing and Health Visitor were held with technical and financial assistance from World Health Organization in Paediatric Nursing, Tuberculosis Nursing, and for Health Visitors.

Nursing Conditions in the States.

Andhra.—There was an acute shortage of nurses in the State and residential accommodation not being adequate the nurses were housed mostly in rented buildings. Private buildings were taken on lease to accommodate men nurses under training. Men and women nursing orderlies in employ were given a course of one year's training to increase their usefullness. Rs. 18,600 were provided by the State Government in the Five Year Plan for improvement of nursing services.

Assam.—There was no marked change in the nursing conditions. All the sanctioned posts were filled. Standard of training was raised, and candidates were selected with as high a qualification as possible. The trained staff were given house-rent allowance where no accommodation was available. A sum of Rs. 3·18 lakhs has been provided for in the Five Year Plan on development of Nursing Services.

Bihar.—There was shortage of nurses in the hospitals and action was taken to recruit them from other States. New Nurses' Home attached to the Darbhanga Medical College Hospital was ready by December, 1953.

Bombay.—The number of nurses in the State was sufficient to meet the requirements of the Government hospitals. To meet the needs of the public and for the advancement of the nursing profession and nursing education, the State Government increased the grant for improvements of the nursing services in the States by sanctioning posts of Sister Tutors for the training schools in the mofussil. Trained nurses were deputed by Government for post-graduate courses at the College of Nursing, New Delhi.

Madhya Pradesh.—The nursing conditions continued to the same as in 1952. The nursing staff in the district hospitals was inadequate for financial reasons. The present number of nurses' training institutions were considered sufficient to meet the demand of trained personnel in the State. More student nurses were admitted for training and a uniform allowance of Rs. 75 p.a. granted to the nursing staff. Male nurses at the Mayo hospital were accommodated on its premises. The nurses quarters were under construction at Raipur. Upto 1953-54, an expenditure of Rs. 2·28 lakhs was incurred out of a sum of Rs. 6·10 lakhs provided under the State Governments Five Year Plan for the training of 86 student nurses.

Madras.—The number of nurses employed in the State was insufficient to meet the needs of the public. In some institutions, the required number of nurses could not be employed on account of financial considerations. To utilise a fairly large number of unemployed nurses trained at Government expense, three training centres were earmarked to employ additional nurses to staff their institutions. Accommodation was made available to both nurses and student nurses by leasing private buildings. Two Nurses were sent abroad for further training, and absorbed in hospitals & centres on return.

A short course in Paediatric Nursing was conducted in the Government General Hospital, Madras for 20 nurses including 12 from other States. A provision added to the Rules of the Madras Nurses and Midwives Act made it possible for unregistered midwives, to take the midwifery examination after undergoing a refresher course of not less than 3 months in an authorised institution. Two new institutions were recognised for training in General Nursing (Higher Grade) and one was recognised for Midwifery training in English.

Orissa.—The shortage of nurses continued and four posts of nursing sisters and forty one posts of staff nurses remained unfilled. To meet the shortage, staff nurses and nursing sisters were recruited from other States and the number of student nurses admitted to the nurses training class at the S.C.B. Medical College Hospital, Cuttack increased by six. The State Government's Five Year Plan had provided for increasing the number of admissions of pupil nurses at the S.C.B. Medical College Hospital, Cuttack by 14. The training centre at the Government Headquarters Hospital, Berhampur was recognised for the training of nurses.

Punjab.—There was no progress made in the general Nursing conditions of the State. Steps were taken to increase the number of trainees at the Lady Hailey Women's Hospital, Bhiwani and admitting male nurses in the training class at the Civil Hospital, Jullundur, to meet the shortage.

The Nurses Registration Act was amended.

Uttar Pradesh.—The State Government Nursing Service Scheme functioned in 33 Government hospitals in the State and no shortage of nurses was experienced in so far as posts sanctioned for Government hospitals were concerned. However, the total number of nurses in the State was not sufficient to meet the demands and needs of the public.

Two male staff nurses after completing training in psychiatric Nursing at the Mental Hospital, Ranchi were posted to the Mental Hospital, Agra and another male nurse sent to the Mental Hospital, Ranchi. for training.

West Bengal.—There was considerable improvement in the nursing conditions as more assistant nurses-*cum*-Midwives were posted at Health Centres in rural areas and trained nurses employed in more State managed hospitals. The shortage of nurses, however, continued. To meet the shortage, a training school of junior certificated nurses was opened at Tollygunje. It was possible to admit a greater number of students to training class at the Medical College Hospital, Calcutta, under the World Health Organization Project. A maternity block was opened in the Bejoy Chand Hospital at Burdwan for the training of nurses. Additional equipment for teaching received from United Nations International Children's Emergency Fund was distributed to different training schools. 226 displaced women were admitted for Ward Attendants' Course in the State Hospitals at Calcutta.

Government paid grants to seven hospitals with training Schools. An amount of Rs. 5,50,000 was provided for in the State Government Five Year Plan for the training of Auxiliary-Nurse-*cum*-Midwives course, from which a sum of Rs. 3,00,000 was provided for the construction of Nurses Hostels for the trainees at Burdwan and other places. Two candidates were deputed for training to the College of Nursing, New Delhi, and one to the All India Institute of Hygiene and Public Health, Calcutta with State scholarships, for higher education in nursing. Three candidates returned from the College of Nursing after the completion of their courses. Two nurses left for training abroad, one on a World Health Organization fellowship and the other on a Technical Co-operation Administration Scholarship. One candidate returned from the United Kingdom having gone on a Mountbatten scholarship. Another returned from the United Kingdom on completion of her basic course in nursing.

Grants for the construction and expansion of Nurses quarters at three hospitals in the State were made. Construction of nurses' residences was completed in Kanchrapara, Berhampore and Tollygunje.

Hyderabad-Deccan.—There was no change during the year under report. Efforts were made to make up the shortage of nurses by recruiting qualified nurses from different parts of India. No new training schools were opened as the State was not able to fill the existing vacancies for student nurses. One matron and one Sister-Tutor were deputed for the Hospital Administration course on World Health Organization fellowships to Canada and Australia, respectively. With the assistance of World Health Organization, a Maternity & Child Health Project to train nurses, midwives and health visitors has been established in the State.

Madhya Bharat.—Efforts were made to meet the shortage of nurses. In order to ameliorate the living conditions and to attract a larger number of students nurses and student midwives, accommodation for 60 nurses and widwives was provided with the premises of the K. E. M. Hospital, Indore, with complete equipment and a library. New nurses quarters were built at Ujjain, Ratlam, Dhar and Dawas. Wide publicity was carried out to attract more women students for training. A sum of Rs. 6,23,781 was spent on nurses training schemes under the 5 Year Plan

Mysore.—Shortage of nurses in the hospitals continued and steps were being taken to increase the number of nurses.

PEPSU.—There was no change in the nursing conditions during the year except that the training of nurses, nurse dais and dais imparted at the Lady Dufferin Hospital, Patiala, was recognised by the East Punjab Nurses Registration Council. Residential quarters for 50 trainees were constructed.

Rajasthan.—There was acute shortage of nursing staff; but, with the introduction of revised grades, the situation showed slight improvement.

Saurashtra.—Ten more seats were sanctioned this year for trainees to meet the shortage of nurses. A sum of Rs. 71,000 has been provided in the 1st Five Year Plan for the development of Nursing Services. A special grant was sanctioned for the training of Harijan women students as nurses and dais. The Nursing School at Junagarh started functioning this year.

Bhopal.—Because of shortage of nurses in the State the number of trainees was increased from 6 to 12 at the Hamidia Hospital. The Sultania Zenana Hospital was recognised for the training of midwives, and the construction of a Nurses Home for this Hospital was taken up at a cost of Rs. 95,000. Construction of additional accommodation for nurses at the Hamidia Hospital was also undertaken.

Coorg.—The nursing conditions were better during the year under review, but the residential accommodation was far from being adequate both for nurses and trainees. Two senior nurses who were sent to the College of Nursing, New Delhi for taking the course in Public Health Nursing returned and were posted under Community Project.

Delhi.—There was no appreciable change in the nursing conditions. Five nurses were doing special tuberculosis work in the New Delhi Tuberculosis Centre. The construction of a part of the new Nurses Hostel for the Irwin Hospital, New Delhi, under the State Government's Five Year Plan was completed.

Himachal Pradesh.—Shortage of nurses continued though four nurses (including two male nurses) and a sister tutor were appointed. Two trainees qualified from the Nursing Training Centre, Nahan and eight student nurses were trained at Government expense during this year. The Training Centre at Nahan was affiliated to the Punjab Nurses Registration Council.

Kutch.—There is a great shortage of nurses in the State. Nurses from other parts of the country are not willing to come in because of the isolated position of the State, lack of accommodation and other amenities. The State has no nurses training school. Nurses employed by Government are registered with the Bombay Nurse's Council as there is no Nursing Council in the State.

Manipur.—Shortage of nurses and residential accommodation for those, who are already working in the State, continued. 30 women students from Manipur and nearby hills areas were trained as midwives. A sum of Rs. 5,000 was spent on scholarships for midwifery students under the First Five Year Plan.

Tripura.—Nursing services in the State improved as the Government of India sanctioned appointments of several nurses for the V. M. Hospital, Agartala, Sub-Divisional Hospital, Kailasahar, and for the Mobile Unit. All the posts could not be filled on account of non-availability of suitable candidates. One training class for training the local women students in nursing was opened in July, 1953, at the V. M. Hospital, Agartala.

Bilaspur.—To make the State self-sufficient in nursing-staff, stipends of Rs. 30 each were sanctioned by the Government of India for local women students for training at the Nurses Auxiliary Training Centre, Nahan, for a period of three years.

Andaman and Nicobar Islands.—The nursing staff was adequate for the needs of the population.

Reports on conditions of Nursing Services during the year 1953 have not been received from Jammu & Kashmir, Ajmer, Vindhya Pradesh, and Travancore-Cochin. The latter two States have, however, sent figures regarding the number of students, number of candidates qualified, and the staff employed during the year under report. These have been included in the tabulated statements in appendices.

College of Nursing, New Delhi.—The College continued its four year B.Sc. (Hons.) course in Nursing and its staff was augmented by the return from abroad of six of its members. An assistant surgeon in charge of the Lady Mountbatten Nursing Van was appointed. The Van is being used for giving students practical training in rural areas.

The total expenditure on the College was Rs. 3,13,550.

Students.—30 candidates were admitted out of 15 who applied for admission to the B.Sc. (Hons.) course in Nursing. Of 19 students in the 1st year class, 14 qualified for promotion to the 2nd year and 14 were successful in their final year. The total Number of students during the year at the College was 68.

15 new students were admitted to the post-certificate course in Teaching & Nursing Administration and 25 qualified during the year. The students came from all parts of India, most of them having been awarded scholarships by the Central or State Governments or other agencies. All the students were resident in the College hostel.

Teaching Staff.—27 teachers including ward teaching sisters and sister supervisors and two Nursing experts provided under the Colombo Plan Assistance Programme formed the teaching staff of the College.

Educational Facilities.—The laboratories and class-rooms of Delhi University and the Lady Hardinge Medical College & Hospital, New Delhi, were made available for the students of the College. The hospitals situated in Delhi and New Delhi were used for providing clinical field experience to the students, under the guidance of the College staff. The V. Z. Hospital, Delhi offered facilities for midwifery training for the 4th year students. The College students used their own Public Health Centre at Chawla village for practical experience in rural work, and for the urban work the New Delhi Municipal Committee Health Centres were used. Practical experience in Tuberculosis Nursing was given at the Lady Linlithgow Sanatorium, Kasauli. The Government of India have sanctioned the establishment of a Child Guidance Clinic at the College. The Clinic is expected to start in 1954.

Indian Nursing Council.—The meeting of the Council held in November, in Delhi resolved:—

1. to enter into negotiations for reciprocity with the General Nursing Council for England & Wales for the certificate in General Nursing granted by those authorities in India which had already established reciprocity before the Indian Nursing Council Act was passed in 1917, and to ask the Central Midwives Board to continue the existing reciprocal arrangements.
2. to recognise the diploma in Tuberculosis Nursing granted by the Tuberculosis Association of India, the diploma in Psychiatric Nursing granted by the Indian Psychiatric Society, and the certificate in Midwifery granted by the Examination Board of the Military Medical Services.
3. to approve of a guide for Teachers & Examiners in Health Subjects drawn up by a Sub-Committee of the Council.
4. to approve of regulations for training of Auxiliary Nurse-Midwives and requirements regarding training in the nursing of men patients.
5. to approve of a revised ratio of nurses to patients namely 1:3 in hospitals used as training centres for nurses etc.
6. to recommend to all State Registration Councils to maintain a supplementary register of the names of nurses, midwives and health visitors who have been registered previously with another State Council, and to show separately on the registers the names of those midwives who are also registered as nurses or health visitors and those who are registered as midwives only.

A questionnaire calling for information on the conditions in training schools, the standard of education of candidates, etc., was sent to 273 training schools and replies were received from 235 and consolidated. A summary of the replies was placed before the Council for suitable action.

Table 49 shows the ratio of nurses to beds, population and students for the year under report, for each State.

CHAPTER VII

Medical Education and Registration

Medical education.—At the end of 1953, there were 33 medical colleges in India. Two new medical colleges, the Kasturba Medical College, at Manipal and the Government Medical College, at Patiala, were opened in 1953.

The Christian Medical College Ludhiana, was raised from a school to a college in 1953, with men and women students eligible for admission, fifty per cent of them being Punjabis. 25 seats were reserved for men and 25 for women students.

The question of upgrading or abolishing the remaining two medical schools, *viz.*, the Arya Medical School, Ludhiana, and the Medical School, Bangalore was still under consideration of the State Governments.

Tables 50 and 51 give detailed information about the number of students (men and women) admitted to various medical colleges and schools in India, the number of passing out, the cost of teaching per student per year, etc.

Fellowship & Study Tours Abroad.—Consequent on suspension of the Ministry of Health's Overseas Scholarship Scheme since 1949, certain International Agencies have been offering to help in providing training facilities in Medical & allied subjects for Indian Nationals under their respective Technical Aid Schemes, as detailed below:—

1. The programme of Technical Assistance by the United Nations Organization and its specialised agencies, namely, the World Health Organization and the United Nations' International Childrens' Emergency Fund;
2. The Technical Assistance Scheme under the Point Four Programme;
3. The Technical Co-operation Scheme under the Colombo Plan; and
4. The Technical Assistance in the shape of fellowships & scholarships offered by the Rockefeller, Ford, and Nuffield Foundations.

Each year the State Governments are asked to sponsor suitable medical personnel employed under them whom they consider training abroad or a study tour essential. A Central Selection Committee scrutinises these lists and panel of suitable candidates is then drawn up. Fellowships are awarded to the students so selected.

In order to improve the standard and method of teaching the Executive Committee of the Council decided that, as an initial measure exchange of teachers may be provided as between colleges in States.

The Council approved the facilities for under-graduate medical training existing at (i) G. R. Medical College, Gwalior, affiliated to the Agra University, (ii) Nilratan Sarkar Medical College, and (iii) Calcutta National Medical Institute (new College) affiliated to the Calcutta University.

Medical Registration.—At the end of 1953, India had 65,904 registered qualified doctors. Table No. 52 shows the number of doctors registered with various State Medical Councils at the end of 1953.

In order to widen the scope of employment and private practices for qualified doctors in general, Medical Councils of the following States recognised the qualifications noted against them which were granted in other States:—

Orissa

M.B.B.S.	Osmania University
L.M.S.	(Osmania),
L.M.P.	(Hyderabad),
L.M.F.	(East Bengal) granted by the East Bengal State Medical Faculty prior to July, 1950.

Hyderabad

M.B.B.S.	(Utkal University),
L.M.P.	Orissa,
D.P.B., D.D.V., D.A., D.O.R.L.	

conferred by the College of Physicians & Surgeons, Bombay as additional qualifications.

Hyderabad State has established reciprocity for registration with the Orissa Council of Medical Registration.

Medical Council of India.—The degree MBBS (Gouhati) of the University of Assam was added to the List in Schedule I.

The Council recommended to the Central Government the inclusion of the degrees of the teaching institutions in Schedule I, namely the MBBS of (a) Bihar, (b) Poona, (c) Utkal, (d) Rajputana Universities and the MMF granted by West Bengal State Medical Faculty.

It further recommended that the M.B.B.S. degree granted by Osmania University, Hyderabad, be transferred from Schedule II to Schedule, I, to be recognized after 15th August 1953.

The Council recommended a syllabus of study for the introductory course in pathology and bacteriology.

The Council formulated the courses of study and drew up a list of requisite facilities for training for post-graduate degrees and diplomas granted by the universities. To regulate post-graduate education, the Council constituted a Committee to advise it on matters relating to post-graduate medical courses, standards of examination, teaching and training requirements, etc.

The Council agreed to the reciprocal recognition of medical qualifications between Ceylon and the Indian Union, provided the Ceylon Medical Council recognised for registration in its own country all the qualifications on Schedule I of the Indian Act.

The Council did not consider the qualifications granted in Portuguese India as an adequate standard to justify recognition on a reciprocal basis.

The Council had revised the recommendations on the qualifications required for appointment to posts of teachers and visiting Physicians/ Surgeons, etc., in medical colleges and attached hospitals for undergraduate and post-graduate teaching.

CHAPTER VIII

Dental Education and Registration

Dental Education.—In 1953, there were 6 Dental Colleges in India. A new Dental Wing at the Madras Medical College was opened in 1953. Under the expansion scheme of the Dental Department of Madras Medical College and the Government General Hospital, Madras, the State Government, sanctioned Rs. 20,000 for additions to the already existing accommodation and Rs. 1,55,000 towards the purchase of equipment and material for instituting a four-year course leading to the Degree of Bachelor of Dental Surgery of the Madras University. The first batch of 15 students was admitted in August 1953.

The Calcutta Dental College and Hospital previously imparted training leading upto the licentiate standard (Licentiate in Dental Surgery). During the year under report, the Bachelor in Dental Surgery course of Calcutta University was introduced and 25 to 30 seats made available each year. Staff and equipment of the institution have been augmented, and a new building constructed.

Dental Council of India.—The draft regulations for the degree course in dentistry drawn up by the Council were under the consideration of the Government of India. The latter, in consultation with State Governments, suggested to the Council to consider the desirability of suitably amending the draft regulations prescribing that dental colleges, should be affiliated directly to the Dental Faculty of a University. The Council agreed to their amendments.

The first examination for dentists, desirous of transfer from part B (Temporary) to part B (Permanent) to the Dentists Register was held in June, 1953. Of the 5 candidates who appeared, 3 were successful. The second examination for such dentists was held early in December, 1953, with six candidates appearing.

Adequate facilities for giving training to dentists under Sections 33 and 34 of the Dentists Act, 1948, do not exist and the response from unqualified dentists was also poor.

The minimum requirements of dental departments of the general hospitals in India were approved by the Council.

Legislation regarding extension of the Dentists Act, 1948 to Part B States, and the registration of such displaced dentists as could not get themselves registered at the time of preparation of the first Register was still under the consideration of the Government of India. No progress was made regarding establishment of reciprocity with foreign countries.

Dental Registration in India.—The new Dental Council for Delhi State was constituted on 23rd December 1953. The tenure of members is 5 years from the date of election.

The following foreign qualifications have been approved and included in the Schedule of Recognized Dental Qualifications appended to the Act, under Section 10, by the State Dental Councils of West Bengal, Madras and Bombay.

(i) Dr. Med. Dent., University of Rostock, Germany,

(ii) Dr. Med. Dent., University of Berlin, Germany,

(iii) Zahnarzt Diploma, University of Berlin, Germany,

(iv) Zahnarzt Diploma, University of Freiburg, Germany,

(v) Dr. Med. Dent., University of Frankfurt, Frankfurt, Germany, and

(vi) Diploma in Dental Surgery (D.D.S.) and Master of Surgery degree of the Baltimore College of Dental Surgery, University of Maryland, Maryland, United States of America.

The Uttar Pradesh State Dental Council has recognized for registration, the Bachelor in Dental Surgery degree of the Lucknow University, granted after the 15th October, 1953. Tables Nos. 53 & 54 give more details on dental education and registration.

CHAPTER IX

CENTRAL DRUGS STANDARD CONTROL ORGANISATION

Drugs Control.—This report covers the seventh year of the working of the Central Drugs Standard Control Organisation and shows a steady increase in its activities.

The provisions of the Drugs Act were enforced in the States of Himachal Pradesh, Bilaspur, Kutch, Bhopal, Tripura, Vindhya Pradesh and Manipur with effect from 1st April, 1953. Though steps were taken to implement them, they were not enforced in part B States except in Travancore-Cochin. As a result of the deliberations of the second meeting of the Drugs Consultative Committee held in August, 1952, there was closer liaison between the Drugs Controller (India) and the Drugs Standard Control authorities in the States. The advice of the Drugs Controller (India) was sought on all important matters such as the handling of prosecutions and other contraventions under the Drugs Act.

The Drugs Standard Control authorities of all part 'A' States and part 'C' States of Delhi, Ajmer and Coorg furnished to this Directorate periodical reports of their activities covering subjects on organisation of administrative and testing sections, number of licences issued, number of prosecutions and the results thereof, with notes on the nature of such contraventions, manufacture of spurious drugs and new drugs and the difficulties encountered. The report was consolidated, and circulated to all the States for information and guidance.

The Drugs Consultative Committee had also recommended the maintenance of records under the Drugs Rules by drug manufacturers and dealers. All the States were advised to print such records in the manner recommended by the Drugs Consultative Committee.

A rigorous check was exercised over biological products subsequent to import and during storage periods in the importer's store houses. Samples were taken under rule 26 of the Drugs Rules and sent for test.

The removal of the 'Sole' Agency clause from Form 9 of the Drugs Rules had a salutary effect on the trade inasmuch as the monopoly in the import of Schedule C drugs no longer vested in the hands of a few importers. In consequence, the Assistant Drugs Controllers were called upon to inspect the premises of parties applying for import licence as a pre-requisite to the issue of a licence in order to ensure that proper and adequate storage facilities were available with applicants.

Import of new drugs.—The import of new drugs increased steadily during the year, and a very stringent check was exercised on their import. No new drug was permitted to be imported unless the Drugs Controller (India) after a close examination of the medical literature, clinical data, results of clinical trials carried out in other countries, etc., as supplied by the manufacturer, was fully convinced of its usefulness. Clinical trials wherever necessary were carried out under the control of this Directorate

in consultation with the Indian Council of Medical Research or the Director, Central Drug Research Institute, Lucknow.

During the year under report, over 90 applications were received for permission to import new drugs under rule 30-A of the Drugs Rules and permission accorded to 12 such.

Number of import licences issued under the Drugs Act.—This information is tabulated below:—

Year	No. of import licences issued on form 10			Number of licences issued on form 11
	Fresh	Renewals	Endorsements	
1953	392	147	167	523

Registration of patent and proprietary drugs at the Central Drugs Laboratory, Calcutta. 205 certificates were issued by the Central Drugs Laboratory, Calcutta for the registration of drugs as patent and proprietary preparations under the Drugs Act, during the year.

Drugs Technical Advisory Board.—Two sub-committee meetings were held in February & October and a meeting of the Board in October of the year.

Administration of the Drugs Act and the Drugs Rules at the ports.—Besides the three major seaports of Bombay, Calcutta and Madras, the port of Cochin was also a declared port of entry of drugs & the organisation for enforcing drug standard control started functioning on 8th March, 1951 under the charge of a Technical Officer at the port.

The vigour with which the Drugs Act and the Drugs Rules were enforced at the ports, the deterrent action taken against offenders and the suggestions made to trade from time to time raised the quality of imported drugs considerably and resulted in the reduction in contraventions of Drugs Rules.

Statistics regarding import of drugs.—The following statement gives the statistics regarding the value of imported drugs, the bills of entry, etc., referred to the Assistant Drugs Controllers at the ports of Bombay, Calcutta and Madras:—

Name of office	Nos. of Bills of entry received	No. of items covered	No. of samples taken for examination	No. of samples sent for test	Value of consignments in thousand of rupees
Office of the Assistant Drugs Controller (India), Bombay.	13,290	28,671	6,045	491	81,623
Office of the Assistant Drugs Controller (India), Calcutta.	3,415	6,629	7,395	540	26,180
Office of the Assistant Drugs Controller (India), Madras.	2,674	4,825	4,628	183	8,931

280 cases of contravention of provisions of the Drugs Act were investigated and dealt with during the year.

Testing of samples under Rules 40 *and* 26 *of the Drugs Rules.*—During the year under report, a much larger number of samples were inspected and more than double the number of samples sent up for test as compared with the previous year. Drugs reported to be not of standard quality were ordered to be re-exported to the country of manufacture or confiscated and destroyed.

Import of Essential Drugs.—This Directorate was in close contact with the State Governments over the supply position of drugs, and reports received indicated that there was no shortage of essential drugs; nor were there complaints from the medical profession on the import policy.

As in previous years, the import policy was *reviewed vis-a-vis* the progress made by the indigenous drug industry, and the policy formulated keeping in view the indigenous production and essentiality of drugs. Aureomycin, Chloramphenicol, Penicillin in bulk (except certain bottled varieties), sulpha drugs, Oxyteracycline and Insulin continued to be on the Open General Licence from the General Area, and other essential drugs, as, Streptomycin, sera and vaccines, bismuth salts, etc., were included in the Open General Licence from the Soft Currency Areas.

Quinine.—The Special Cinchona Committee held its meeting from 16th to 19th March, 1953 at Calcutta and submitted its report to the Union Ministry of Health. The Committee was of the opinion that from the experience gained from two world wars the value of quinine as a strategic material was very great and that it should have a place in the national economy till a reliable alternative is produced out of indigenous raw materials.

As compared with newer synthetic antimalarial drugs treatment with quinine is slightly more expensive.

Medical Store Depot.—The Medical Stores Organisation supplied 5,000 items to 7,458 indentors on the basis of 'no profit no loss' and an out-turn of Rs. 1,70,73,015 in 1953.

The Organisation also handled stores for International Agencies such as the United Nations' International Children Emergency Fund, World Health Organisation, and Technical Co-operation Mission.

Pharmacy.—The revised regulations made by the Pharmacy Council of India prescribing the minimum standard of education required for qualification as a pharmacist, were approved by the Government of India.

The State Governments were requested to commence the teaching of pharmacy in at least one institution in each State in accordance with the Education Regulations.

A panel of two inspectors appointed by the Executive Committee of the Pharmacy Council of India inspected the Birla College, Pilani.

Part A States have completed the publication of the "First Register" of pharmacists. The Punjab, Bengal and Bombay Governments have constituted State Pharmacy Councils.

To secure uniformity of action in enforcement of provisions of the Act throughout the States "Model Rules" under Section 46 of the Pharmacy Act were drawn up by the Pharmacy Council of India. These were forwarded to State Governments for adoption.

The Pharmacy Council of India appointed a sub-committee to examine the question of changes that would be necessary in the Pharmacy Act.

Indian Pharmacopoeia.—Seven out of eight sub-committees (Veterinary sub-committee excepted) met during January to March, 1953 and scrutinized the draft monographs.

In the meeting of the Co-ordination Sub-Committee held in June, the final list of monographs as screened by various sub-committees was examined and suggestions for the finalization of Biological Appendices were made.

The Indian Pharmacopoeia Committee approved the list of monographs and appendices in respect of biological products.

The Pharmaceutical Enquiry Committee.—The Committee toured extensively the various parts of the country, held discussions with State authorities and received memoranda from medical associations, manufacturers, representatives, pharmaceutical associations and the Chemists & Druggists Federation suggesting ways & means for developing the industry and urging uniformity of enforcement of legislation and centralization of administration of the Drugs Act.

Chapter X

Medico-Legal Work and the Serologist Department

The scope and nature of work of the department remained essentially the same as in previous years. Promptness of analysis and reporting on cases was maintained throughout the year.

In 1953, 26,462 exhibits were analysed from 6,150 cases; blood and semen groups were determined in 6,298 exhibits from 1,216 cases. Grouping work from stains has increased considerably.

Rhesus grouping and typing in suspected cases of erythroblastosis foetalis has been included in the laboratory routine. 334 cases of Rh grouping and typing were done.

In 1953, 11,259 cases were tested for syphilis. Auto-urinary proteose was prepared for allergic patients of the Carmichael Hospital for Tropical Diseases attached to the School of Tropical Medicine, Calcutta.

Table No. 55 shows the work done by Chemical Examiners of the States and the Serologist & Chemical Examiner, Government of India during 1953.

CHAPTER XI

Ports and Airports Health Administration

Health administration of the major sea-ports *i.e.* Bombay, Calcutta, Cochin, Kandla, Madras, Visakhapatnam and the inter-national airports *i.e.* Bombay airport (Santa Cruz), Calcutta airport (Dum Dum), Delhi airport (Palam), Madras airport & Tiruchirapalli airport are directly under the control of the Central Government and regulated by the Indian Port Health Rules, 1938 and the Indian Aircraft (Public Health) Rules 1946. These are based on the International Sanitary Conventions. The International Sanitary Conventions were replaced by the International Sanitary Regulations of the World Health Organisation and came into force in respect of India on 2nd March, 1953. The Regulation permits quarantine measures being taken only in respect of quarantinable diseases, namely, plague, smallpox, cholera, yellow fever, louse-borne typhus and relapsing fevers. The Indian Port Health Rules 1938 and the Indian Aircraft (Public Health) Rules 1946 have been revised in conformity with the International Sanitary Regulations and will come into operation shortly.

The most important disease from the point of view of risk to India is Yellow Fever, a mosquito-transmitted disease. Special precautions are taken to prevent the entry of the disease from infected areas of Africa and South America *via* aerial and maritime traffic. All aircraft entering India from the West are disinsected as a routine measure. Persons arriving within 9 days of their departure from yellow fever infected areas without valid certificates of vaccination against yellow fever are detained in quarantine for the required periods. Monkeys, being potential reservoirs of yellow fever infection, are not permitted to be brought into India or allowed to transit through India from yellow fever endemic areas, unless there is evidence to show that they have not been in such areas for 31 days before reaching India when they are not likely to be a source of danger. Eleven monkeys were seized on arrival and destroyed during 1953.

During the year under report, sanitation in port and airport areas was fairly satisfactory. The local authorities continued to be responsible for keeping ports and airports clean and free from mosquitoes and rats. Defects in sanitation noticed by the Port and Airport Health Officers were eliminated by the authorities concerned when brought to their notice.

During the year, the Aedes Index (stegomyia) remained well below 1 per cent at all the ports and airports. Water supplied in port and airport areas was safe and satisfactory. Samples of water taken from taps and storage tanks in the harbour or on board ships were regularly tested and action taken when needed. Crew provisions on board ships were inspected and sub-standard and unwholesome foodstuffs were replaced.

The Port Health Committees for provision of medical facilities for seamen which were set up in 1946-47 at Bombay, Calcutta, Madras, Cochin and Visakhapatnam, were reconstituted and their functions enlarged to enable them to co-ordinate the health activities of various authorities at

the ports. Reconstitution of the Port Health Committee, Calcutta could not be completed during the year. The Committee continued to look after the medical welfare of seamen.

The Seamen's Clinics at Bombay and Calcutta, taken over by the Government of India in 1947 and 1948 respectively and placed under the administrative control of the Port Health Officers, continued to provide free treatment to all seamen. The Clinic at Bombay provided both outdoor and indoor treatment, while the Clinic at Calcutta catered to the needs of outdoor patients only. State Government hospitals continued to provide suitable outdoor and indoor treatment for seamen. Expenditure involved in the treatment of seamen "off articles under one year" was met by the Government of India and maritime State Governments on a 50-50 basis, while shipping companies met the expenses of seamen "on articles".

In pursuance of the decisions taken at the International Labour Conference held at Seattle on 16th June 1946, a scheme for the medical examination of seamen by Government doctors was introduced in Bombay and Calcutta in 1950 and later extended to Madras, Cochin and Visakhapatnam. The scheme is administered under the Indian Merchant Shipping (Medical Examination) Rules, 1951 framed under Section 26A of the Indian Merchant Shipping Act, 1923, its aim being to prevent engagement of physically unfit seamen on international voyages. Such medical examination of seamen is carried out by Port Health Organisations. A high standard of examination is maintained. 31,907 seamen and trainees were examined at all the major ports during 1953. Of these, about 800 were found permanently unfit for sea service.

The tabulated statements (Tables 56 & 57) show the activities of various major port and airport health organisations.

Chapter XII

MEDICAL RESEARCH

Indian Council of Medical Research

In 1953 the meetings of the Scientific Advisory Board and Advisory Committees were held in Gwalior and the Board constituted Advisory Committees on cholera, malaria, nutrition, leprosy, plague, clinical research, maternity and child health, filariasis, virus diseases, industrial health and pharmacology.

The following Sub-Committees functioned during the year.

Heamatological, Therapeutic Trials, Tuberculosis, Venereal Diseases, Liver Diseases, Evaluation of Nutritional Status, Bacteriological and the Nutrition Survey sub-committee.

The Council received a grant-in-aid of Rs. 15,00,000 during 1953-54 from the Government of India and was able to assist research in a number of medical colleges, research institutions and universities, in both clinical and pure science fields. The Rockefeller Foundation made substantial grants for the supply of equipment for the use of their Fellows.

The work of the Council is reviewed briefly. Full information on its activities is contained in the Technical report of the Scientic Advisory Board which is published annually.

Nutrition

In the field of Nutrition, particular stress was laid on two problems, *vi.*, assessment of techniques for nutritional surveys and assessments of the extent of protein malnutrition in the country.

Maternity and Child Health

The Maternal and Child Health Advisory Committee concentrated its attention, on problems that were met within the health supervision of mothers and children.

Two Sub-Committees were appointed to review current work on, "Anaemia in pregnancy" and "Toxaemia of pregnancy".

Clinical Research

To stimulate this aspect of medical research, Clinical research units have been set up. The clinical research unit at Bombay has found that there is a deficiency of vitamins B1, B2 and B12 in oral cancer patients and the administration of these vitamins increased the excretion of estrogens. The unit is also studying hormone excretion in cases of endocrine disorders in women. Normal standards of the levels of excretion of 17 ketosteroids, estrogens and pregnanediol in women are being determined.

The clinical research unit at the School of Tropical Medicine, Calcutta, in addition to the studies on epidemic dropsy, conducted chemotherapeutic and chemoprophylactic trials with newer anti-malarials. The unit was engaged in studying the etiology and pathogenesis of tropical splenomegaly.

A Liver Diseases Sub-Committee was constituted to formulate a definite programme of work with a view to avoid duplication in different centres in the country. A Liver Diseases Research Unit was established at Agra. Besides, original investigations are carried out at Coonoor, Bombay and Madras. A proforma for liver cirrhosis and allied diseases has been prepared and is available to individuals and institutions interested in this subject.

A Registry of Hepatic Pathology under the auspices of the Council has been established at Agra. Material obtained after liver biopsy or autopsy was collected along with detailed laboratory and clinical data. A large number of cases from India and abroad were registered. These cases cover specimens of almost every type of liver diseases.

Anaemia in India is a major medical problem. A Haematological Sub-Committee was constituted to co-ordinate the work of various workers. The Haematological Unit at Calcutta made a very notable contribution by standardizing haematological apparatus and techniques. These have now been adopted by various medical colleges and workers elsewhere.

The enquiry into typhus fever in Bengal carried out investigations on the entomological and transmission aspects. A monograph on the mites of Bengal has been brought out.

The Tuberculosis Sub-Committee initiated epidemiological study on tuberculosis. Another study was to investigate whether the level of tuberculin allergy induced in human beings by B. C. G. vaccination was affected by exposing the vaccination site to strong sunlight immediately after the vaccine had been injected.

Inter-laboratory evaluation of procedures for serological tests of syphilis followed in various laboratories in India was undertaken by a separate Sub-Committee with a view to standardise the techniques and study the causes of possible variation in results.

The neuropathology unit at Bombay is engaged in experimental studies on lathyrism and the pathological examination of human brains in cases of deaths from malnutrition. One of the objects of establishing this unit was that it would serve as a reference centre for neuropathology. A large number of specimens are being referred to it for opinion. This included neurosurgical biopsies, brains from routine autopsies and muscle biopsies from suspected cases of muscular dystrophy, or neuro-muscular atrophy.

An enquiry to study in detail the endemic focus of schistosomiasis has been instituted at the Grant Medical College, Bombay.

Other clinical research studies were on immunological properties of lens and uveal proteins at the Seth G. S. Medical College, Bombay; the investigations into the chromatophorotropic hormone of the pituitary gland and its employment in the treatment of pigmentary diseases of the skin at the Central Drugs Research Institute, Lucknow; and the studies

on the incidence of Penicillin resistant Staphylococcus pyogenes and serological types of C. diptheria in Calcutta.

Indigenous Drugs

The work done by the Indigenous Drugs Enquiry at the Drugs Research Laboratory, Jammu has shown that there were more than fifty important essential oil bearing plants growing in the North-Western Himalayan region. During the year under review, some of these essential oils were studied with regard to their pharmacological properties.

The Indigenous Drugs Enquiry at Calcutta studied the actions not only of Rauwolfia serpentina but also of Ergot and Veratrum alkaloids. The work done by the Enquiry revealed that oxytocic activity of Daemia extense compared favourably with Ergometrine hormones. It was found that crude extracts of Daemia extense maintained their activity on storage better than its purified active principle.

Industrial Health

The Council has constituted an Industrial Health Advisory Committee, the functions of which are twofold: firstly, to recommend to the Council, the subjects requiring immediate study. Its second important activity is to help industrial administration of the country.

An Industrial Health Research Unit which was set up at the All-India Institute of Hygiene and Public Health, Calcutta in 1947 has so far completed work with regard to (1) the incidence of acute lead poisoning in printing industries, (2) the effect of excessive noise on the individual output of weavers in jute industries, (3) an assay of the various indices of comfort applicable to Indian conditions, (4) the gross effects on the health of women who work in industries, and (5) the incidence of occupational dermatitis.

The unit carried out investigations, on (1) Porphysin excretion in common tropical diseases and in lead poisoning, (2) employee attitude and morale, (3) salt and water metabolism, and (4) animal experiments on the toxicity of mineral dusts.

An enquiry into the problem of traffic accidents and accident-prone personnel amongst bus and tram drivers in Calcutta, at the Calcutta University, promises to provide definite means of screening psychologically those individuals who are likely, to be accident-prone.

The enquiry into the effect of sewage treatment and excreta disposal methods on intestinal parasites and the enquiry into the treatment and hygienic disposal of lac was held at the All India Institute of Hygiene & Public Health, Calcutta. The results that were obtained have made it possible to design disposal plants which could be utilised in large scale and small scale lac factories and would also facilitate recovery of useful bye-products and to permit the re-use of the effluent for treating seed lac in the early stages.

A symposium on industrial health was organised by the Council in Bombay in September, 1953. The symposium was well attended by administrative and medical representatives of industries.

Virus Diseases.

The Polio Research Unit in Bombay, restricted its work mainly to (a) the isolation of new strains of polio-myelitis, (b) the isolation of strains from sewage, and (c) epidemiological studies to determine the mode of spread of the disease.

Several strains of influenza viruses have been isolated at Coonoor. No information was, however, available about the antigenic make-up of the Indian strains and their relationship to well-known foreign strains. Twenty-three strains of influenza viruses were taken up for analysis at the Pasteur Institute of India, Coonoor. The fowl has been found to be very satisfactory for production of ant-sera against influenza virus strains due to its low chuinhibitor content, ease of immunisation and bleeding, and ready availability.

The Virus Research Centre in Poona, set up jointly by the Indian Council of Medical Research, the Government of Bombay, and the Rockefeller Foundation for the study of the arthropoid-borne virus disease of man and domestic animals was formally inaugurated in February, 1953. In the following June, a systematic attempt was made to isolate the viruses. Two strains were isolated which remain to be classified by appropriate immunological methods.

The Rabies Enquiry at the Pasteur Institute carried out investigations to determine, (1) whether the 5 per cent Semples' vaccine manufactured by the Institute had any protective value under circumstances in which controlled untreated groups have been observed, and (2) whether there was any variation in the mortality rate as a result of treatment with 5 per cent Semples' vaccine compared with the 1 per cent. vaccine. The treatment with 5 per cent. Semples, vaccine was superior to that obtained with 1 per cent vaccine and saved four out of every five persons who would otherwise have succumbed to rabies.

Publications

The two Journals under the auspices of the Indian Council of Medical Research, *viz.*, the Indian Journal of Medical Research and the Indian Journal of Malariology continued to have a large circulation. The Council maintains its own library at Kasauli. It has set up a photostat and microfilm service units and a similar unit at Bombay. A large number of microfilm and photostate copies are supplied to several medical colleges and research institutions.

II. *Indian Cancer Research Centre Bombay*

The Indian Cancer Research Centre was inaugurated in December, 1952 and has since become a centre for research and education in cancer. Laboratories have been set up and manned by the returning members of the staff after training abroad and other departments have been opened & started to function.

Neuropathology

In addition to surgical pathology and clinico-pathological work, two types of experimental studies have engaged the attention at the Neuropathology unit established at the Tata Memorial Hospital in 1949.

(a) *Pathoganesis of Lathyrism.*—In order to investigate the role of Lathyrus sativus in the causation of lathyrism in the country, experimental work has been in progress on rats and monkeys. The animals are being maintained on diets incorporating Lathyrus sativus in proportions varying from 70—100 per cent. Wistar rats kept under observation on this regime for several months have not shown any clinical evidence of disease, nor has the examination of the viscera and the nervous systems of these animals revealed any changes suggestive of Lathyrism.

(b) *Effects of radiation on cutaneous nerves.*—Fiftyone biopsies from the earskin of 6 rabbits have so far been studied after irradiation in doses varying from 50r to 19,500r; and at time intervals varying from 1 to 238 days. Intravital staining with methylene blue was employed. Unirradiated skin biopsies provided controls. Histologically, damage to the intra-dermal nerve twigs was noted only after doses heavy enough to cause tissue necrosis (about 15,00r). were used.

Leprosy

A study of cutaneous nerves in 232 persons with leprosy has revealed quantitative and qualitative changes in the intradermal nerve twigs, in both neural and lepromatous types of the disease. Structures resembling organised nerve-endings could be demonstrated in only 4 out of 121 biopsies from human skin with normal sensations, suggesting that for the greater part of the body skin (the hairy skin) specific end-organs are not essential for the reception of cutaneous sensations.

A histological study of early macular lesions which developed in contact with leprosy patients and changes in the skin following chemotherapy, are two other problems which are under investigation. Attempts at transmission of human leprosy to Wistar strain rats have so far been unsuccessful, although some interesting lesions were observed in two animals.

Exfoliative Cytology

Diagnostic procedures have been developed using the methods of exfoliative cytology for the early diagnosis of oral carcinoma and carcinoma of the cervix. Cognate studies with cell suspensions obtained from human and animal issues are also under way to find out cell behaviour in different environments.

Experimental Biology

Cancer producing and cancer inhibiting substances.—Under a scheme sponsored by the Council of Scientific and Industrial Research, work has been started to test the carcinogenicity of sulphur analogues of polycyclic hydro-carbons. Of the four compounds so far tested, two 4, 9 Dimethyl 2, 3, 5, 6 dibenzthiophanthrene and 6, 12 dimethyl benzo (1, 2b-4, 4b 1) dithionaphthene have been found to be carcinogenic. Epidermoid carcinoma develops after about fifty paintings. It is proposed to check these findings on tissue culture material.

The testing of isolated tobacco fractions for their carcinogenicity is another project under study.

Testing Contraceptives

The All India Family Planning Commission has requested Central aid for biological testing of contraceptives under controlled laboratory conditions on standard strains of mice of known breeding quality. The work is in progress.

Tissue Culture

An attempt is being made to compare biological behaviour of two interesting tumours in vitro *viz* adenocarcinoma from a cancer susceptible strain Dba (Bar) and Carcinoma Simplex from another line of Dba, devoid of milk agent which are grown in hanging drop for many generations. The carcinoma simplex has been found to show a stronger proteolytic activity then the adenocarcinoma. Such fundamental differences in the cell physiology may be correlated with the presence or absence of the milk agent in two tumours. The short term cultures of both the tumours are being investigated under the Electron Microscope for physico-chemical nature of the milk-borne agent. The roller tube cultures are being used for growing normal chick embryo heart tissue and treating them with compounds to be tested for their carcinogenicity. Elaborate experiments are being planned to use the tube cultures as well as the slide cultures for testing the biological activity of cancer producing and cancer inhibiting substances.

Biophysics

Since the inauguration of the Indian Cancer Research Centre, two laboratories—Electron Microscopy and Infrared Spectroscopy have been set up for work on the biophysical aspects of different biological subjects studied here.

Electron Microscopy

The Indian Cancer Research Centre was given an RCA—EMU. 2D Electron Microscope under the American Point Four aid programme A systematic investigation of tissue culture of MTI (mammary tumour inciter) containing tumours and non-MTI containing tumours for the presence of particles such as those seen in electron micrographs of Rous Sarcoma is in progress. Tissue extracts of different varieties of mouse carcinoma are also being studied from a similar angle.

A comparative study is carried out between normal collagen and collagen found in conditions that can be classified as diffuse collagen disorders.

Spectroscopy

This section is a recent addition to the existing laboratories and it is intended to employ the spectroscopic technique extensively as parts of the research programme carried out at the Centre. To study the mechanism of biological effects of ionizing radiations the Physics Department in collaboration with the Biology Division of the Atomic Energy Commission has taken up a systematic study of the chemical effects of ionizing radiations on substances of biological importance. Spectroscopic analysis of irradiated RNA, purine and pyrimidine bases have shown interesting results. Spectroscopy is also aiding clinical biochemistry investigations.

Biochemistry

Tobacco and Oral Cancer: Investigation on the production of cancer alleged to result from the habit of chewing tobacco and lime, with or without betelnut and other ingredients of pan, is under progress.

Studies in vitamins and hormone metabolism: Work on vitamin B excretion in oral cancer patients is being extended to include another member of the Vitamin 'B' group, *viz.*, B 12. An investigation of the effect on the metabolism of these vitamins after administration of estrogenic hormones is also in progress.

Studies have been initiated and the determination of normal levels of excretion of 17—ketosteroids and urinary hormones in women of different age groups is a pre-requisite for an understanding of the mechanism of excretion of these substances in endocrine disorders, which are very disquieting to the individual.

Clinical Biochemistry

70 cases of different gastric disorders, such as, peptic ulcer, duodenal ulcer, cancer of the pancreas and cancer of the stomach, have been investigated. From amongst these, fourteen cases with provisional diagnosis of cancer of the stomach, showed a high acid and alkaline phosphatase activity (range: 16—55 King—Armstrong units). Such an increased phosphatase activity (0—3 K.A. units) was not observed in other cases with provisional diagnosis of peptic ulcer or duodenal ulcer. These studies show that this test may prove useful as a diagnostic procedure for cancer of the stomach.

Human Variation

The main problems engaging attention are human blood groups, hereditary diseases and defects, endocrine disorders, family studies for heredity and linkage.

Statistics

Statistical studies are in progress on the great incidence of oral cancer as compared with other forms, its relation to various forms of tobacco chewing and smoking and the relation of circumcision of the male to the incidence of carcinoma of the cervix in the female.

Biology division—Atomic Energy Commission

The Atomic Energy Commission, quite early in its career, established a small unit (Cell Biology Unit) in the laboratories of the Tata Memorial Hospital, Bombay in 1948. Later, it decided to start a medical and Health Division in close liaison with the Centre to keep a check on the health of the workers of the Atomic Energy Commission. Some of the research problems being investigated may be enumerated:—

1. Influence of total body irradiation on the biosynthesis of nucleic acids.
2. Influence of total body irradiations in intestinal E coli.
3. Configurational changes induced by Ionising radiations.
4. Role of calcium in breast cancer in C3H strain of mice.

5. A better method for the hydrolysis of proteins.
6. Cytological effects of whole body radiation on Ehrlich ascitic tumour.
7. Cytology of primary, transplanted and ascitic tumours in mice, rats and hamsters.
8. Molecular Organisation and Finer Structure of Chromosomes.

Medical Division—Atomic Energy Commission

The Atomic Energy Commission of the Government of India also decided to organise a Medical Division at the Centre (1) to safeguard the health of personnel exposed to radioactive materials by periodical Medical Examination and blood-count check-up; (2) to suggest and supervise the setting up of monitering facilities of personnel and equipment as well as the organization of film badge service; and (3) to maintain a reference file on radiation health hazards, monitering and protection.

III. THE CENTRAL RESEARCH INSTITUTE, KASAULI

As in the past, the Institute continued to manufacture and supply large quantities of vaccines and sera, such as, cholera, T.A.B. and anti-rabic (human, dog & other animals) vaccines, antivenom, anti-diphtheric and high titre sera, tetanus toxoid, etc. bacteriological examinations and sample tests were conducted.

Research and Other Activities in 1953—Rabies

Considerable interest has been shown in recent years in serum therapy in experimental rabies. Detailed investigations of the value of rabicidal serum in street virus infection of guineapigs show that treatment with rabies serum alone cannot protect rabies-infected animals but serum followed by a course of 5 per cent Semple's Vaccine gives good results; these results, however, are no better than with vaccine alone, provided distilled water is used as menstruum for the emulsification of brain tissue from which the vaccine is prepared.

The immunizing value of Semple's Vaccine prepared in distilled water was the subject of field investigations during 1951 and 1952. Health resturns received from the treatment centres show that the incidence of hydrophobia has been reduced following the introduction of Semple's Vaccine prepared in distilled water. The use of increased dosage from 5 c.c. to 10 c.c. of vaccine is not advocated except for face bites and seriously bitten cases, as the field trials have shown no significantly better results.

Comparative tests carried out with a 20 per cent Semple's Vaccine and 6 per cent Semple's Vaccine have shown that a "Single dose" therapy for dogs with a 20 per cent vaccine affords good protections, though it is not of as high an order as 6 repeated doses of 5 per cent. Semple's Vaccine. A method of preparing 20 per cent vaccine and its inactivation has been perfected and is now in routine use.

Cholera.—Investigations were carried out on the action of cholera collagenase and elastinase on native collagen and elastin. Further work on the nature of the enzyme dissolving purified collagen indicated that it was a trypsin and that it would dissolve fresh muscle tissue and the protein of cholera vibrios. In view of the fact that vibrios may produce similar enzymes inside the human gut and the enzymes would be in very

close contact with the intestinal wall, one cannot ignore the effects of these enzymes in explaining intestinal flux so characteristic of cholera.

Histamine, a toxic product produced by cholera organisms and alleged to be an agent responsible for the cholera syndrome, was tested for its effect on peristalsis and permeability of the intestine. In a concentration of 1 in 500, no change was observed either in peristalsis or in permeability of guineapig intestine.

Cholera organisms were grown in (i) excised pieces of guineapig ileum, (ii) intact intestinal loops of living guineapigs. The effect of treatment on the permeability of the gut was examined in comparison with the contiguous look of gut of the same animal, kept under identical conditions but without cholera infection. Significant increase in permeability was noticed in the cases of infected gut.

Studies on standardisation of cholera vaccine have been completed and a report on the findings has been submitted to the Expert Committee on Biological Standardisation, World Health Organisation.

Miscellaneous.—Reports have appeared about the toxic hazards of the commonly used insecticides like D.D.T. Pyrethrum, etc. Guineapigs which were exposed for long periods to these insecticides were autopsied and sectioned. Histological examination of lungs, liver and other organs did not show any pathological changes which could be attributed to the action of insecticides.

IV. THE ALL INDIA INSTITUTE OF HYGIENE AND PUBLIC HEALTH, CALCUTTA

As in previous years, the Institute activities related to the training of public health personnel of different categories and to the carrying out of researches in various problems of public health importance. The Maternal and Child Health Scheme sponsored by the Government of India in collaboration with the United Nations' International Childrens' Emergency Fund, World Health Organization was also implemented and three international experts provided by the latter joined the Institute.

The Institute did not undertake any manufacture of Sera and Vaccines etc. during the year, but it gave the usual prophylactic inoculations against yellow fever to 3,162 persons going abroad and to 7 against typhus.

A total of 7054 routine samples were examined.

Research.—Among the problems investigated, the following may be mentioned:—

Cholera.—The Examination of samples of water, silt and fish from the river Hooghly was continued. Cholera vibrios were isolated only from water and that too only during the periods of cholera epidemics in the area. N.A.G. vibrios were obtained from all these sources and typed according to Heiberg's classification. An analysis of the data, so far collected, has shown a striking correlation between the periods of cholera epidemics and the seasons of prevalence of N.A.G. vibrios of Heiberg's Groups I and II. In view of this, it appears essential now to study more intensively the N.A.G. vibrios.

A series of experiments were conducted to study the viability of cholera vibrios in the alimentary tracts of certain fishes by the technique of artificial infection. The results of these experiments considered along with (i) the correlation observed between the prevalence of N.A.G. vibrios, and (ii) the data on the occurrence of N.A.G. vibrios in clinical cases of cholera during the initial and final stages of cholera outbreaks, seem strongly to support the mutation theory.

Studies on the mucinolytic enzymes produced by cholera vibrios and non-agglutinable vibrios were conducted during the period under report. It has been observed that the elaboration and maintenance of quantitative activity of mucinase is influenced by several factors, PH. and moisture. Indications are that the intensity of mucinase activity is of greater significance than its mere presence.

Typhus.—Investigations on typhus were aimed at elucidation of the exact mechanism of transmission of *R. orientalis* by *T. deliensis* in humans. Experiments to infect upto twelve linear generations a brood of mites obtained from an area from where scrubtyphus had never been reported, have so far been negative.

Tuberculosis infection and mortality in rural areas close to an industrial town.—The main purpose of this investigation was to ascertain the extent to which tuberculosis infection and morbidity in a rural area was influenced by its nearness to an industrial town. Certain villages situated in West Bengal were selected. Tuberculosis infection rate was found to be 38·9 per cent, the proportion of positives being higher in males than in females, and the total morbidity rate worked out 1·55 per cent as against 0·6 per cent previously reported. Neither the infection rate nor morbidity rate was apparently influenced by the distance of the village groups from the industrial centre. However, the factors which were found to influence the tuberculin-positive reaction in order of importance were (1) employment in industries, (2) frequent visits to towns, (3) daily movement, (4) outdoor occupation, (5) moving about, (6) occasional visits to towns, and (7) indoor occupation. Evidence was also found that middle class families bore the worst brunt in rural areas, and the very poor families, suffered more than the poor families.

Studies on the Epidemiology of Plague in Calcutta.—(a) Bionomics of rat fleas in relation to epidemiology of plague in Calcutta was undertaken to determine if there was any correlation between the breeding and other bionomic habits of the local flea and the occurrence of human cases of plague in the recent outbreak in Calcutta. There were two waves of growth of *X. cheopis* (the vector species of plague); the principal one was in winter months, immediately preceding or covering the period of epidemic wave of plague and a second minor one during the rains. Though, ordinarily, females fleas preponderate over the males in number during these seasons, there was an appreciable increase of the males this season. The breeding season for *X. astia* a poor transmitter of plague, on the other hand, was during the rains extending over to autumn. These findings were corroborated in the field. The longevity of starved fleas was found to be low, being highest during winter and lowest during the rains. In this respect *X. cheopis* fared slightly better than *X. astia*. The study of the biting propensities also revealed that

X. cheopis was normally a poor feeder on man, but the propensity increased during winter and spring both for human and rat blood. It was, however, interesting to note that neither *X. cheopis* nor *X. astia* developed fully mature eggs when fed on human blood; but they readily did so when fed on rat's blood.

(b) A comparative field study in the plague endemic ward No. 8 and plague-free ward No. 10 in different seasons showed that the endemic ward 8 had more *R. rattus* and *R. norvegicus,* more *cheopis* and higher flea indices, more rat holes and greater rat densities than the non-endemic ward No. 10 and so ward 8 provided greater facilities for propagation and perpetuation of plague infection than ward 10. Both mouse inoculation test and cultural examination of batches of fleas, recovered from these two wards during the period under review, yielded, however, no typical plague baeillus. Of the soil samples collected and examined from rat borrows 20·5 per cent from ward 8. showed free fleas and larvae. These findings have helped in the clarification of some of the local problems of endemicity of plague in Calcutta.

Effect of sewage treatment methods on the survival of intestinal parasites.—Studies on this problem were continued during the year. Effluent samples obtained from septic tank-*cum*-trickling filter treatment showed the presence of ascaris and hookworm ova. The effect of digestion of sludge on the viability of ascaris eggs and the rate of their survival under varying conditions of heat and moisture were studied in the laboratory. A suitable design for the construction of an experimental treatment plant was completed.

Hygienic treatment and disposal of Lac wastes.—The results obtained show that by this method, a final effluent having a B.O.D. of the order of 500 ppm. can be produced. The suitability of intermittent sand filtration for treatment of lac wastes was studied and the data analysed with a view to standardize design.

Enquiry on the presence and viability of pathogens in night soil compost.—Laboratory procedures for the quantitative enumeration of helminthic ova occurring in compost material were standardised and a suitable method for studying viability of parasitic eggs under laboratory conditions was worked out. Work on the isolation and enumeration of Salmonella and Dysentery group of organisms was taken up.

Estimation of argemone oil in mustard oil by the Bromide-Bromate test.—The bromide-bromate qualitative colour test for detection of presence of argemone oil in mustard oil has been further improved so that the quantity of argemone oil present can be estimated with the help of a Lovibond tintometer. It was found that, except seasame oil, none of the following common adulterants of mustard oil, *viz.*, linseed oil, groundnut, niger seed and mineral oil interfered with the test.

The value of some common foodstuffs high in methonine content in ameliorating .experimentally induced fatty livers in rats by dietary means.—Curative diets based on the methionine analysis of foodstuffs carried out in the laboratory, were worked out to include such items as are commonly available, *viz.*, black gram, broad bean and ground nut bacause of their relatively high methionine content. Three diets, each containing one of the three items mentioned above, were found to have

curative value in experimental fatty infiltration induced in rats by dietary means. The choline content value of the supplement diets was parallel with the methionine value.

Phrynoderma.—Work was continued on this problem. The effect of supplementing linseed oil therapy with pyridoxine gave better response, and available evidence showed that the beneficial effect was not insignificant.

Health Survey of the Urban Families.—The survey of the health status of a community, served by an urban centre in Calcutta, was completed during the period. The total number of families included in the survey were 1,002 comprising of 5,646 persons. 78 per cent of the families were single families and the average size of the family was 5·6. 47·6 per cent of the population were females and half of this group were above the age of 18 years. There were 1,069 children under the age of 5 years. The average number of people per room were 3·6. The percentage of literate women was 64·5. 16 per cent of the families were keenly interested in controlling the size of the family and followed the methods though not very regularly, only 4·3 per cent practising it regularly. 2.5 per cent of the women of the child bearing age were sterile. Morbidity rate in the area was 6·2 per cent during the period of survey. Of this, 65.5 per cent were ambulatory cases and the rest confined to bed. With regard to the diseases prevailing, respiratory diseases, including tuberculosis of the lung, formed the most important cause. When divided into non-tubercular respiratory diseases and tubercular respiratory disease, it was found that 8·7 per cent of the total illness was due to the former and 7·6 per cent to the latter. Skin diseases contributed 14 per cent towards the total morbidity figure, gastro-intestinal diseases were responsible for 10 per cent, and communicable diseases for 4·8 per cent. These causes clearly stress the importance of instruction in personal and home hygiene.

The role of human being as a link between successive cholera epidemics.—How and where the cholera organisms exist between successive epidemics when there are no cases of the disease has not been clearly understood. The large mass of statistical data collected at Trichinopoly was analysed to obtain a clue to this problem, but it did not support the hypothesis that human beings were the link between successive outbreaks of cholera.

Investigations on several other problems, such as, social factors in the continued prevalence of certain diseases in the tropics, *e.g.*, cholera, a general health survey of Sikkim State, low sodium diets, normal blood picture of expectant mothers, opinion survey on population problem, evaluation of nutritional status, etc., and activities at Singur Health Unit in regard to environmental sanitation, epidemic diseases control, public health laboratory services, health education, etc. were pursued during 1953.

V. THE SCHOOL OF TROPICAL MEDICINE, CALCUTTA

The School has conducted work on the following subjects:—

(i) Recognition of the mode of action of Rauwolfia serpentine in lowering blood pressure and demonstration of a marked vaso-dilator effect on renal blood-vessels.

(ii) Observation on the variation in composition of the toxic alkaloids of the whole or crushed Argemone seeds by action of air and light.

(iii) Development of a simple culture medium for fusiform bacilli.

(iv) Cytochemical observations on *E. histolytica, P. berghei* and *L. donovani.*

(v) The single dose treatment of malaria and tapeworm infection with mepacrine.

(vi) Recognition of a case of histoplasmosis for the first time in India.

(vii) Paper chromatography method for identification of digitalis glucosides.

(viii) Biochemical obervations on malnutrition due to protein deficiency.

(ix) Investigation of newer chemotherapeutic remedies on partial or complete restoration of sensation in leprotic lesions with Thiosemicarbazone.

(x) Demonstration of the full development of malaria parasite in the mosquitoes fed on patients having paludrine treatment. This observation, contrary to the accepted view, has lately been confirmed in Malaya.

(xi) Identification of two new fungi in the skin lesions of animals, which were transmissible to man.

Teaching.—Consequent on the affiliation of the D.T.M. with the Calcutta University as D.T.M. & H., D.T.M. examination under the Faculty of Tropical Medicine and Hygiene has been discontinued. The new D.T.M. & H. session for nine months commenced in October, 1953 with 12 medical graduate students from different States.

Thirty-five medical men and nine social workers from different parts of India were given training in leprosy. A doctor from Burma, on a World Health Organization Fellowship, underwent training in leprosy.

Two special courses of instruction on malaria, one for medical and the other for non-medical men were held at the School in collaboration with the All-India Institute of Hygiene and Public Health, and Medical and Public Health Directorate, West Bengal. 225 candidates attended the course. The State Government selected personnel from the above successful candidates to implement the National Malaria Control Scheme in the State.

The Quarterly Bulletin of the Schools has begun to be published from July 1953.

VI. THE MALARIA INSTITUTE OF INDIA, DELHI

General.—The Institution held a 12 week course for Medical Officers (22 students attending including 2 from Afghanistan), a short course for Malaria Engineers (attended by 10 Engineers), and four 4-week courses for Malaria Inspectors (133 students) during the year. Special lectures and demonstrations were arranged for visiting students from

various Institutions. The laboratories of the Institute were recognised by the Patna University, for the purpose of training leading to the Ph.D. degree. Excellent facilities are available at the Institute's library and museum for a detailed study of the subjects and requests for references are met in a comprehensive manner. The quarterly Indian Journal of Malariology had been regularly appearing since 1929. Thirteen Malaria Bulletins, forming part of the Health Bulletin series of the Government of India have been published. A section on Filariasis has also been added.

A hatchery of *Gambusia affinis*, the mosquito larvae eating fish, is maintained at the Institute and supplies are made to workers in different parts of India as and when required.

Routine Activities.—269 adult mosquitoes and 39 larvae received from different parts of the country were identified, and entomological specimens were sent to workers in India and abroad. Preparation of the J.S.B. stain and its staining technique were modified, standardized, and forwarded to institutions and workers.

Research Activities

Protozoology.—Three simian and one avian species of malaria parasite were continued to be maintained. A virulent strain of *P. knowlesi* was isolated in rhesus monkeys from blood obtained from the Kra monkey from the Nuri valley near Tampin. The infected blood was flown from Malaya. During a routine survey for malaria parasites in avian hosts, two species of plasmodia *P. polare* and *P. rouxi* were detected in the common Indian partridges (Titar) a recent observation in India.

Parasitology.—Studies on the host-parasite relationship in different nutritional states of the host in rats infected with *P. berghei* were continued. It was found that the course of *P. berghei* infection in rats on exclusive milk diet was milder than in those on a milkless diet as well as a diet which included milk. Haematological studies in rats infected with *P. berghei* showed that the parasite had a selective preference for invading immature erythrocytes, there being a fall in erythrocyte count during the primary parasitaemia, and a relative increase in polychromatophils. During the latent period, there was good recovery, but anaemic conditions recurred during relapses.

Chemotherapy.—About 50 synthetic and 6 indigenous drugs were tested against *P. gallinaceum* in chicks. Pyrimethamine proved 66 times more active than proguanil. Assessment of the comparative merits of pyrimethamine, proguanil and bromoguanide were made against *P. cynomolgi* in rhesus monkeys. Proguanil was proved to be most active against this plasmodium.

Hospital and large scale field investigations were undertaken to assess the merits of several anti-relapse drugs like (a) primaquine, (b) quinine-pyrimethamine with a follow-up of pyrimethamine for 8 weeks, and (c) quinine-pamaquine. Investigations on chemotherapeutic action of Paludrine, its metabolite and that of 3:4-dichloro-analogue of Paludrine on *P. berghei* infections in mice revealed that metabolites were more active than paludrine and the metabolite of dichloro-analogue was more active than that of paludrine.

Studies were made on the reaction of blood induced infection in albino mice to Daraprim. No significant action was noticed on the asexual and sexual forms. Investigations on spleen size in albino mice and rats in blood induced infections revealed that splenomegaly increased with parasitaemia. During latency, it was reduced in size, which never returned to normal. The splenomegaly in animal receiving antimalarials in suppressive doses was of the same order as in untreated infections.

When Pyrimethamine is used for prolonged and continuous periods in sub-effective doses against *P. cynomolgi* in rhesus monkeys, the plasmodia quickly developed a high degree of resistance to the drug. They had also developed cross resistance to proguanil and bromoguanide but not to chloroquine. Quinine and pyrimethamine when administered together, were observed each to potentiate the action of the other against *P. gallinaceum* in chicks and *P. falciparum* in human malaria. Action was evident when combinations of the drugs were administered in doses much lower than the effective level. Effect of pyrimethamine against sporogony cycle of *P. gallinaceum* in Aedes aegypti was also studied. Unlike proguanil, its inhibitory effect in the development of oocyst and sporozoites was of a transient nature. Studies on liver injury associated with malaria were continued. It was observed that rhesus monkeys when kept on low protein diet for periods of 6–12 weeks, developed liver injury of significance when infected with *P. cynomolgi*. Uninfected animals on the same diet did not show any significant lesions.

Insecticides. The rate and degree of dissolution of crystals of residual deposits of insecticides in the cuticular wax of insects are important factors influencing the toxicity of contact insecticides to insects. Investigations showed that the dissolution of crystals in the cuticular wax of *Musca nebulo* and *Anopheles stephensi* started almost immediately and that they almost completely disappeared in 3 and 6 hours respectively. In the case of *Culex fatigans*, crystals were observed intact even after 24 hours. These observations are of considerable interest and are in conformity with the natural biological resistance of *Culex fatigans* to DDT residual deposits.

Investigations were undertaken to determine resistance if any, developed by culicine mosquitoes to DDT and it was observed that the mosquitoes captured from a DDT sprayed village were found to be comparatively less susceptible to DDT than those from an unsprayed village. When the strain of *Culex fatigans* resistant to DDT was subjected to the action of other chlorinated hydrocarbon insecticides, mortality rates were found to be high and almost identical with those of the normal strain. Apparently, DDT resistant strain of *Culex fatigans* is initially not cross-resistant to other insecticides tested.

In another experiment, DDT was fed to fowls, and on the 4th day, mosquitoes belonging to the normal and resistant strains of *C. fatigans* and of other species, were fed simultaneously, on these fowls. While no death occurred in the resistant strain of *C. fatigans* there was significant mortality in the normal strain in which mosquitoes died only during the first two days and not thereafter when blood meal had been digested and ovaries had matured. This method of feeding mosquitoes on DDT fed fowls (100 mg/kg., B.W., three days in succession) seems

to provide a reliable means of assessing the widely varying susceptibility of different species of mosquitoes and of evaluating the degree and level of resistance of different strains of the same species.

Field investigations

Conclusions on the field studies in progress since 1950 on the behaviour of mosquitoes in relation to insecticidal application are:—(i) residual insecticidal application does not alter the normal behaviour of mosquitoes as their entry into treated houses, their feeding activity and their general movements. (ii) Mosquitoes show a certain amount of excito-repellant effect after contact with surfaces treated with DDT suspension and emulsion at the rate of 50 Mg. DDT/sq. ft. (iii) BHC deposits at the rate of 10 mg. gamma isomer per sq. ft. also exerted repellant effect on mosquitoes. (iv) The repellant or excito-repellant effect of DDT and BHC deposits on mosquitoes is of little significance as regards the control of these insects because mosquitoes pick up lethal doses from the deposits of both the insecticides and eventually die.

To evaluate different insecticides against mosquitoes under different field conditions, studies were undertaken in the villages of Punjab, Uttar Pradesh and Bombay. Different dosages and combinations of insecticides used in the form of suspension are being tested at different places.

Gross toxic hazards of dieldrin (25 mg./sq. ft.) to spraymen and inhabitants of the treated villages were under study in Delhi State.

Results will appear in a subsequent report.

Chemistry

As a metabolite of proguanil has been known to have strong anti-malarial activity, a number of structurally similar compounds of the type 1-aryl-2:4-diamino-6:6-dialkyl-1:6-dihydro-1:3:5-triazine were prepared. On testing these against *P. gallinaceum*, some of them were seen to have highly anti-malarial properties. They are being further studied. Metabolic studies with Bromoguanide (a highly active drug similar to proguanil) in monkeys led to the isolation of an active metabolite, *viz.*, 1-p-bromophenyl-2:4-diamino-6:6-dimethyl-1:6-dihydro-1:3:5-triazine. This metabolite proved twice as active as proguanil metabolite against *P. gallinaceum*.

Plasma concentration studies with pyrimethamine (daraprim) were conducted in monkeys using Brodie's methyl orange method. The results revealed that the maximum concentration of pyrimethamine was reached at least 2 hours after the oral administration of the drug and the plasma concentration rapidly fell within 24 hours.

Anti-malaria Operations

Anti-malaria operations in Delhi State were intensified during 1953 as a part of the country-wide National Malaria Control Programme.

Under this programme, almost all the villages in Delhi State and the outlying Rehabilitation colonies were sprayed with DDT as a result, the percentage of malaria cases in relation to the population of Delhi urban

area showed a further reduction and was the lowest so far recorded (1·9 per 1,000). A further indication of marked reduction in the incidence of malaria is afforded by the continued fall in spleen rates of some outlying localities in the urban area where risk of malaria used to be very high.

In rural areas, the results were no less striking. The total number of malaria cases recorded during the year 1953 was 3·378 as contrasted with 18,344 immediately before the commencement of anti-malaria operations in the rural areas in 1946.

Spleen rates in child population recorded in selected villages situated in different types of areas in Delhi State gave further evidence of considerable reduction in the incidence of the disease.

Filariasis

A Filaria Section was set up at the Institute during the year under report. Blood samples from a number of dogs and garden lizards, locally collected, were all founded to be negative. Infective larvae of Consipiculum guindientis (a reptilian filaria found in calotes in Madras) repeatedly transmitted either through direct injections or through the bites of infected mosquitoes into the garden lizards failed in develop in them. The utility of lizard filariasis of Madras calotes for the screening of drugs was studied. Hetrazan (Diethylcarbamzine) a drug reputed to have marked (microfilaricidal) effect in human filarial infections, however, was found ineffective against this filaria.

The ascaricidal effect of Hetrazan was tested in a number of persons showing intestinal helminthic infections in Delhi. Studies are in progress.

VII. THE CENTRAL DRUGS LABORATORY, CALCUTTA

Research

Pharmacognostic Research

It has shown chemically that the thin roots of *Rauwolfia serpentina* were richer in alkaloidal content than the thicker roots. Variations in alkaloidal content of the leaves of *Rauwolfia canescens* were also examined. The study of the alkaloidal content under different physiological conditions of black and white varieties of *Datura metal* was continued.

The use of ultra-violet light in indentification of genuine samples from spurious ones has come into prominance. This method is being further developed in this Laboratory. A good number of adulterated samples of different species of Rauwolfia plant were examined and simple microscope tests have been worked out to detect such adulterations.

Pharmaceutical Chemistry.—Attempts were made to evolve newer methods of separation, identification and assay of drugs while conducting routine analysis of such products. Tests on lines similar to those specified in the British Pharmacopoeia for the estimation of minute quantities of lead, arsenic and mercury in pharmaceutical preparations were conducted the method of analysis further developed and estab-

lished, will be reported in due course. The problem of testing and estimating important individual constituents in complex mixtures continued to engage attention of the analysts of this Laboratory. As there was no official method for the estimation of *Cinchocaine hydrochloride* (Nupercaine), a new method consisting in reducing the solution with zinc and acetic acid, diazotising and comparing the colour with similarly treated cinchocaine hydrochloride, was devised. A quick method of estimating *Oil of Wintergreen* in ointments was devised by hydrolysing and comparing the colour after the addition of ferric chloride. Imported samples of *Balsam Tolu* were examined, most of which failed to conform to B.P. standards. In almost all the cases, the total balsamic acid contents were considerably low, although they conformed to all other purity tests and chemical constants. A colorometric assay method of streptomycin, dihydrostreptomycin and their derivatives and when in mixtures based on reactions of the fuanidine groups of the streptidine moiety of the molecule is under development.

Biochemistry.—The protein proteose content was investigated and after tests on a large number of samples, both foreign and indigenous, an arbitrary limit of the protein proteose content in such preparations has been worked out.

The estimation of vitamin A in complex aqueous mixtures presented some difficulty. A modification of the B.P. method has been evolved which was found to give better results. In any chemical method for the estimation of vitamin D, it is essential to eliminate vitamin A and non-vitamin D sterols from vitamin D because they seriously interfere with the test. Separation of vitamin D is done by differential solubility in 72 per cent ethyl alcohol followed by digitonin precipitation. The separation of vitamin A is done by chromatographic absorption in Floridin earth. A new reagent, iodine trichloride, is used for the estimation of vitamin D.

Pharmacology.—In connection with the investigation of quality of liver injections, a large number of samples were subjected to specific test for absence of undue toxicity, and the pyrogen test. These laboratory tests may help in eliminating samples likely to cause undesirable reactions in susceptible individuals. An interesting study has been made of the changes which the snake venom undergoes on prolonged heating. It has been observed that many of the active principles contained in both Cobra and Russel Viper venom were destroyed by a temperature of 95°C. for 30 minutes. However, the neurotoxic factor, which is mainly responsible for death in cobra bite is usually preserved after such treatment and consequently the toxicity of this venom is not appreciably altered. On the other hand, excepting the hypotensive effect, all other effects in viper venom disappear on that treatment. The toxicity of the viper venom is also appreciably diminished.

A detailed toxicity study was made of a new imported drug 'Spirotrypan', an arsenical preparation in solution. Slight difference in the toxicity figure from that worked out by the manufacturer has been observed, due presumably, to a difference in the strain of animals used, diet, environmental conditions, etc.

Bacteriology.—Preliminary studies on the action of *chloramphenicol, aureomycin and terramycin* on B. coli communis, S. sonnei and Fried landers bacillus were made with a view to select the most susceptible organism for routine test in this Laboratory. The suitability of introducing streptofaecalis (R) in the microbiological assay of *Folic acid*, a method has been examined and the results obtained are also reliable and consistent.

A study of the factors influencing toxin and anti-toxin reaction has been undertaken. The factor which is known as 'avidity' still needs clarification. The quality of different therapeutic sera may vary due to this factor. A detailed study of various factors in this connection is being undertaken.

Ten papers were contributed by the Laboratory to various scientific journals during the period.

A total number of 1,366 samples, standard as well as non-standard, were examined in the various departments of the Laboratory in 1953.

VIII. *Haffkine Institute, Bombay*

During the year under review, the demand for plague vaccine fell to a still lower level than that of 1952. The demand for T.A.B. vaccine was also slightly lower than before. However, in regard to cholera vaccine, there was an exceptionally heavy demand during the year. Owing to an outbreak of cholera epidemic, the Institute was called upon to supply over 19 million ml. of cholera vaccine as against 3·8 million ml. in the preceding year. The Institute collaborated with the Department of Nutrition in investigating the causes of outbreak of epidemic dropsy at Nadiad, Bombay State. During this year, the Institute manufactured more than one lakh bottles of parenteral solutions valued at nearly Rupees two lakhs. Anti-toxins and sera against tetanus, diphtheria, gas-gangrene, plague, dysentery, snake venom, etc., were manufactured and issued.

25,644 bacteriological, serological and biological tests on clinical material were carried out in addition to 2,056 histo-pathological examinations. The Institute acted as a reference laboratory on behalf of the World Health Organisation for venereal diseases control programme under which 928 samples were tested revealing an agreement in results to the extent of 96·5 per cent. 1,909 samples of pharmacopoeial and non-pharmacopoeial substances were tested, and many instances of spurious substitutes for essential life-saving remedies were brought to light. 7,158 biochemical analysis of samples of blood, cerebro spinal-fever, urine, milk, etc., were carried out. For the estimation of potassium in serum, a micro-method designed to save considerable labour was under investigation.

During the year, 8,714 persons applied for anti-rabic treatment and 8 more anti-rabic treatment centres were opened, bringing the total number of such centres based on this institute for supplies to 153. Besides the manufacture and supply of anti-rabic vaccine, studies were carried out on other viruses, such as, influenza, vaccinia and variola and herpes simplex. The Government of India Yellow Fever Diagnostic Unit remained attached to this Institute.

The routine work of processing and lyopihilising human plasma was continued. The total amount of plasma collected was 3,88,250 ml. and the dry plasma processed amounted to 4,28,750 ml. Side by side with the manufacture of plasma, the work of investigations on iso-immuniza-due to Rh factor was conducted.

Demands from various Government and Municipal hospitals, Public Health bodies, registered medical practitioners and charitable hospitals for the supply of sulphathiazole in the form of powder, tablet or injection were fully met, and investigations for the manufacture of other sulpha-drugs were continued. 95 lakhs of vitamin tablets of different compositions were sold during the year, and quinine and quinine substitutes were retailed by the Institute.

All the departments of this Institute carried out research in their respective fields of investigation, a comprehensive report of which may be seen in Part II of the 1953 Annual Report of the Institute. Three scientific enquiries sponsored by the Indian Council of Medical Relief on plague, on the role of nutritional factors, and on Indian poisonous snakes were conducted. Seven students were admitted into the Institute for their post-graduate training leading to degree by thesis.

The Institute, besides manufacturing vaccine, anti-toxin and toxoid, snake venom serum, normal and hypertonic salines, intravenous glucose and distilled water, manufactured dried blood plasma, vitamin tablets, sulphathiazole tablets and injections and protein hydrolystate.

Research conducted in these laboratories comprised of the following:—

(a) Studies on vitamin 'A' and mode of action of vitamin 'D';

(b) Studies on the nutritive value of duck egg-white, and the metabolism of animal and vegetable proteins;

(c) Clinical investigations on body composition, electrocardiographic changes in malnutrition, and studies on nutritional oedema syndrome;

(d) pathological studies on liver injury and metabolic inter-relationship of haemopoietic factors; and

(e) field work connected with the studies on child growth.

The annual course in Nutrition was held from March to June, 1953. The staff of this Institute contributed 18 papers to the Indian journal of Medical Research and other scientific journals.

IX. *The Pasteur Institute of Southern India, Coonoor*

One of the investigations carried out in this Institute was to determine the value of ACTH in rabies. The conclusions arrived at were that ACTH did not appear to be of any value in animals given a challenge virus intracerebrally, and that it did not alter the course of disease in animals which had started showing signs of rabies. It appeared to be of some value in cases where the virus was given peripherally. The findings suggest the possibility that normally there is a stimulation of adrenal cortex in rabies.

It is well known that there is marked hypoglycaemia and glycosuria in animals suffering from rabies, probably due to the destruction of islet cells in the pancreas. Experimental work showed that 1/3rd of the animals treated with insulin survived while all the controls died of rabies. A larger group of animals will need to be experimented upon to confirm this finding.

A survey in the Nilgiris and Coimbatore districts of Madras State indicated that 'Q' fever was prevalent in those areas.

X. *The Drug Research Laboratory, Jammu and Kashmir*

A brief review of research activities of the Drug Research Laboratory for the year is presented below.

One of the important functions of the Laboratory is to make a survey of the flora of Jammu and Kashmir. All the collections of plants made in the State have been arranged, sorted out and categorised.

Cultivation of Medicinal Plants in Kashmir

Successful experimental cultivation of a number of plants, *viz.*, Belladonna, hyoscyamus, pyrethrum, digitalis has been continued. The import of some important medicinal plants from abroad as mentha arvensis from Japan, Chenopodium ambrosiodies var, anthelminticum from Turkey, Anethum graveolens from United States of America, and Glycerrhiza glabra from Persia were arranged.

Chemical Investigations and Assays.—In order to study the effect of storage, on belladonna leaves and roots, extracts from belladonna folia and radix and tincture belladonna, hyoscyamus leaves, extract hyoscyamus, and tincture hyoscyamus; Stramonium leaves, Extract stramonium and tincture stramonium, were stored under conditions in which they were usually kept in the stores and analysed every three months. It was observed that except for extract stramonium which showed some deterioration during storage, all the drugs and finished preparations kept well.

Essential oil bearing plant.—The essential oil bearing plants of Jammu and Kashmir, growing wild or cultivated, were investigated and their physical properties compared with those growing in foreign countries.

Nutritive value of grasses.—More than two hundred samples were obtained and analysed for their nutritive value as well as for their poisonous and non-poisonous character. There were about twenty species which possess excellent nutritive value. Data is being compiled and brochure on the grasses of the State, their distribution, nutritive value, and their poisonous and non-poisonous characters, is being brought out.

Pharmacological investigations on Indigenous Drugs.—Pharmacological action of essential oils of four medicinal plants, Alpina galanga (Vern. Kolanjan), Pistacia integrima (Vern. Kaka Singi), Piper betel (Pan), and Nardoctachys Jatamansi DC, (Ver:—Jatamanshi Balachr) used in the indigenous systems of medicine was investigated. All these four essential oils possess very similar pharmacological activity.

Melia Azedarch Linn.—(Vern. Bakavan Brek):A tree which attains the height of 40 ft.' is commonly cultivated in India as an ornamental shade tree. The root is acrid, bitter and anthelimintic and the fruit contains an amorphous bitter principle, Bakaynic acid, and sterole. A preliminary pharmacological investigation of Bakayanin on rabbits showed that when applied locally or when injected subcutaneously or intramuscularly had no bacteriocidal action on *S. aureus, B. typhosum, C. inaba and Sh. flexner.* Its toxicity on intraperitoneal injection was studied in groups of six albino rats. Doses above 80 mg/kg produce slight increase in rate and amplitude of respiratory movements. Doses upto 100 mg./kg. have no effect on tone and rythm of intestinal movements.

Research on antibiotics.—Secreening work on the isolation of antibiotics substances from higher plants, soil bacteria and fungi was continued. Antibiotic substances isolated from Leeh hirta, Melia azidirachta, and Cassia absus were studied in detail. Oil obtained from leaves, seeds and bark possess marked antibacterial activity against gram positive organisms and also against M. tuberculosis streptomycin resistant strain.

Cassia absus (Vern. Chaskm).—It was observed that Cassine sulphate inhibited the growth of S. aureus in a dilution of 1 in 10,000 but a dilution of 1 in 500 was necessary to obtain inhibition of B. coli and B. typhosum.

Screening of soil bacteria.—Six specimens of bacteria belonging to actinomyces group were found to possess antibiotic activity of a low order.

Synergistic action of Antibiotics.—During recent years, the Laboratory carried out investigations on the combined action of Penicilllin and Viomycin, and (2) Chloromycetin and Viomycin. It was observed that the cultures of gram-negative organisms which were resistant to penicillin become highly susceptible to it when used in combination with slightly inhibitory concentrations of iomycin.

Biological standarization.—Biological assay of samples received from the manufacturing sections were conditioned.

Twelve contributions to scientific journals stand to the credit of this Laboratory for the year 1953.

XI. *The King Institute of Preventive Medicine, Guindy Madras*

The King Institute of Preventive Medicine was originally designed to serve as a Lymph Depot to supply vaccine lymph to the whole province, its activities have extended enormously since that time and particularly during and after the war. The Institute now functions as:—

(i) A general diagnostic laboratory for hospitals in Madras city and district;

(ii) A Public Health Laboratory for the examination of water from protected water supplies throughout the provinces;

(iii) Government Analyst's Laboratory for the examination of samples of food under the Prevention of Food adulteration Act;

(iv) A centre for the manufacture of essential biologicals as vaccine lymph, cholera and T.A.B. vaccine anti-toxic sera, etc.;

(v) A Plasma Processing centre in connection with the work of two Block Banks in the City of Madras;

(vi) A laboratory for the examination of Foods and Drugs under the Drugs Act, 1940; and

(vii) A main centre for medical and public health researches in the provinces.

A special feature of the Institute is the provision of Investigation Unit established for the purpose of studying etiological and epidemiological aspect of diseases in the field.

This Institute undertook research in the following subjects during 1953:—

1. Carcinogenic effects of betel chewing with tobacco;
2. factors inhibiting growth of tubercle bacilli in sputum culture;
3. infantile biliary cirrhosis;
4. tropical eosinophilia;
5. use of BCG in cases of leprosy;
6. anaemia in pregnancy;
7. epilepsy; and
8. sodium fluoride therapy in filariasis.

XII. *The Central Institute of Research in Indigenous systems of Medicine, Jamnagar.*

The Central Institute of Research in the Indigenous systems of Medicine at Jamnagar was established in 1953. The year under report may be looked upon as one of organization. Collections were being made of books and paper for a Library, of specimens of herbs, drugs etc. as exhibits for a Museum. A pharmacy was established to prepare and dispense medicines in the out-patient department of the Institute's hospital, which was opened in November, 1953.

CHAPTER XIII

Indigenous systems of Medicine and Homoeopathy

The Government of India had appointed a Committee in 1949 to work out and forward a detailed scheme for the development of a Centre of Research in Ayurvedic and Unani systems of Medicine on as broad a basis as possible. This Committee recommended that the proposed Institute should be established at Jamnagar in association with the Gulab Kunwarba Ayurvedic Institution. The recommendation was accepted by the Government of India and the Institute started to function in 1953 and received a grant-in-aid of Rs. 3,17,500/- in the current year, and a further provision of Rs. 5 lakhs made for the next year for starting a post-graduate course in Ayurveda.

As the Universal Health Institute in Bombay undertakes research in Ayurveda, Unani, Homoeopathy and Naturopathy, a grant-in-aid of Rs. 20 thousands was paid to the Institute during the year.

Committee on Homoeopathy.—An *ad hoc* Committee on Homoeopathy was formed in 1952 and continued to function during 1953. It was constituted with a view to discuss measures to be taken to implement some of the suggestions made by the representatives to the Planning Commission, which were:—

(a) A Central Council of Homoeopathic Medicine may be formed.

(b) Suitable colleges among the existing ones to be upgraded and standardised and the starting of new institutions considered.

(c) The course of instruction in colleges may be common during the first two years.

(d) Facilities for homoeopathic research may be provided.

(e) A Central Homoeopathic Drug Manufactory and laboratory for standardization of drugs may be opened at Lucknow.

The Committee also considered that there should be one basic course of training in Homoeopathy, *i.e.*, a Degree Course of five years made up of 4½ years of basic and hospital studies and 6 months of internship.

To facilitate this, it recommended that (1) 3 existing Homoeopathic colleges in Calcutta should be amalgamated. (2) The Homoeopathic Colleges in Lucknow, Gudivada and Midnapore should be up-graded. (3) At least one college should be established for promoting post-graduate training to graduates in Homoeopathy and modern medicines and a start could be made by developing the proposed Homoeopathic College in Bombay.

(Tables 58-59 give details of practitioners in Ayurvedic and Unani systems of Medicine and the Teaching Hospitals with their staff for the year 1953).

No Act is in force to regulate the registration of Ayurvedic and Unani Practitioners in the States of Andhra, Assam, Madras, Orissa, West Bengal Jammu and Kashmir, Rajasthan, Bhopal, Coorg, Himachal Pradesh and Andaman and Nicobar Islands, except those detailed in below.

Name of the State	Registration under the Act
Bihar	The Bihar Development of Ayurvedic and Unani Systems of Medicine Act, 1951.
Bombay and Saurashtra	Bombay Medical Practitioners' Act, 1938.
Madhya Pradesh	Ayurvedic and Unani Practitioners' Act, 1947.
Punjab	Punjab Ayurvedic and Unani Practitioners' Act, 1949.
Uttar Pradesh	Uttar Pradesh Indian Medicine Act, 1939.
Hyderabad	Hyderabad Medical Act No. 1 of 1312 Fasli.
Madhya Bharat	Madhya Bharat Act.
Travancore-Cochin	Travancore-Cochin Medical Practitioners Act, of 14-10-53.
Delhi	East Punjab Ayurvedic and Unani Practitioners' Act.

CHAPTER XIV

Voluntary Organisations and Associations,

Indian Red Cross Society

The Indian Red Cross Society provided the essential Red Cross Services to prisoners in the custody of the Neutral Nations' Repatriation Commission in Korea during the Mission's five months stay.

Immediate relief measures were given by the Society during the serious floods devastating the Godavari delta in Madras State and in the 15 districts of Bombay State. Likewise, it helped its sister Organisations in U.K., Netherlands, Iran, Turkey, Greece, Yugoslavia, Germany, Japan and Austria in times of great disasters.

Apart from conducting a 71 bedded Home at Bangalore for the totally disabled ex-servicemen, numerous hospitals and institutions were given continuous aid as in previous years. Its Maternity and Child Welfare Bureau now well established gives valuable services to mother and child. From its Fund, a sum of Rs. 12 lakhs had been paid out since the inception of the Indian Forces' Medical After-Care Organisation.

To meet the heavy demands on the Society budget each year, a fund raising campaign was conducted. The Red Cross participated in the World Health Organisation Seals Sale Campaign and the World Health Day celebrations in the country. The Society has on its rolls 25 State, 326 district and sub-district branches with an adult membership of 49433. The Junior Red Cross membership rose to more than 12 lakhs organised in over 18,000 groups.

St. John Ambulance Association (India) and St. John Ambulance Brigade (India)

84,210 persons attended the courses of instructions in First Aid, Home Nursing, Hygiene and Sanitation, Mothercraft and Child Welfare, of whom, 65,132 qualified for the Associations Certificates, *i.e.*, 61,635 in First Aid, 3,207 in Home Nursing, 157 in Hygiene and Sanitation and 133 in Mothercraft and Child Welfare. The St. John Ambulance Brigade is available for public duty when required.

Tuberculosis Association of India

The Tuberculosis Association of India helped open a 100 bedded Tuberculosis Hospital at Mehrauli near Delhi for the establishment of which, the Government of India contributed Rs. 6½ lakhs and Lala Ram Sarup Khanna his estate and Rs. 25,000/- in cash. The Association published its first number of the Indian Journal of Tuberculosis.

The Association held its Annual Tuberculosis Workers' Conference in Mysore. Subjects relating to tuberculosis among industrial workers, chest surgery and B.C.G. were discussed. Its fourth annual Tuberculosis

Seal Sale Campaign brought in Rs. 5,72,000. The training of personnel was continued. 14 post-graduate students of the University of Delhi and 8 of Punjab University were trained at the Tuberculosis Sanatorium, Kasauli, besides, 16 students from the College of Nursing, Delhi. 8 candidates took the training as Tuberculosis Health Visitors. From its poor patients' Fund, it was possible to help 147 poor Tuberculosis patients to the extent of Rs. 10,000. The Government of India made a grant of Rs. 2,02,000 towards the management of the 100-bed Hermitage Hospital for displaced Tuberculosis patients. There are 56 tuberculosis hospitals, 64 sanatoria, 155 clinics and 147 wards attached to hospitals with a total bed-strength of 13,703, thereby showing an increase over the previous year of 1,21,149 and 721 respectively.

22 State Associations remained affiliated to the Tuberculosis Association of India and 5 more were under formation.

Hind Kusht Nivaran Sangh (Indian Leprosy Association)

The work of the Hind Kusht Nivaran Sangh may be divided into three heads—

(1) The work of the head office and the work of the Organising Secretary;

(2) The research work carried out for the Sangh at the School of Tropical Medicine, Calcutta;

(3) The work of the State branches and District branches.

The work of the Head Office is mainly administrative and the honorary Secretary directs the entire activities of the Sangh including publications and propaganda. Chief among the publications is the quarterly journal "Leprosy in India" which is issued from the School of Tropical Medicine, Calcutta. Other publicity materials like booklets, posters etc. are issued from the Red Cross Depot, New Delhi. The Organizing Secretary participated in the Conference on Leprosy convened by the Madhya Pradesh Government to draw up a five year leprosy control plan for the State. He attended the 6th Indian Conference of Social Workers at Hyderabad and read a paper on social aspects of leprosy.

The Sangh set up a Committee for formulating a plan for leprosy control in endemic areas to be operated through a co-ordinated effort of the various agencies doing leprosy work. The plan formulated by this Committee served as a pattern for the pilot project of the Government of India.

The Leprosy Department of the School of Tropical Medicine has been the centre of research activities of the Sangh. The main work during the year was to study the value of new pharmaceutical preparations for the treatment of Leprosy, the effect of B.C.G. vaccination on lepromin test, the significance of positive sero-reactions for syphilis in leprosy, the value of intra-cellular lipoids in the classification of cases of leprosy etc.

There is a State Branch of the Sangh in each of the nine part A States as also in the two States of Hyderabad and Mysore. With the formation of Andhra State, the establishment of an Andhra State Branch is under consideration. In respect of each State Branch, either the Head of the State or a Minister is the President and top-ranking officials and influen-

tial non-officials are on the governing body. In keeping with the tradition and policy of the parent body, each State Branch works in close co-operation with the Government and acts as a co-ordinating agency between the several official and non-official bodies in the State engaged in leprosy work. A review of the work of the State Branches reveals certain evidence of expansion and growing work.

Madras State has 19 district branches, Orissa 10 and West Bengal 5.

Mission to Lepers

The Schieffelin Leprosy Research Sanatorium was opened at Karigiri, near Vellore in 1953 on the completion of the hospital block and staff quarters and the Wellesley Bailey Children's Sanatorium late in 1952, at Zamurradganj, near Faizabad with 10 dormitories and a children's hospital.

The Mission operated rural mobile units and out-door clinics in certain areas with very encouraging results.

Kasturba Gandhi National Memorial Trust

The Trust opened a maternity hospital at Ras in September during the year with an Organiser to guide the centre. There were whole-time lady doctors at Singanallur (Tamiland), Omandur (Tamiland), Aurangabad (Orissa), Ras (Gujrat), Seetanagaran (Andhra), Parinche (Maharashtra), Saragaon (Mahakoshl) and Kasturbagram (Madhya Bharat).

Midwifery training is given in Institutions recognised by the Advisory Medical Board of the Trust. Indian Nursing Council recognise the Trust midwifery diploma. The Trust has drawn up a syllabus for the two year auxiliary nurse-midwifery course.

Five scholarships each of Rs. 75/- p.m. are awarded to students intending to do the M.B.B.S. provided the holders pledge to serve the Trust from 3 to 5 years after graduation in rural areas.

All India Blind Relief Society, New Delhi

The society held 24 eye relief camps which were attended by 20,709 patients. 3,183 eye operations were performed. A mobile unit visited 37 places and attended 23,052 cases. The Society rendered outdoor treatment to 1,200 cases at the rural centres at Madanpur and Dhasa. Magic lantern lectures were attended by 29,125 persons when literature on prevention of blindness were distributed.

Training Nurses Association of India

The Association has now 8 branches including the two new in Bihar and Punjab, and a membership of 7,185. The Florence Nightingale scholarship for higher study in U.K. and other scholarships totalling Rs. 3,900 were awarded to four other students, for post-graduate study in India. The Welfare Fund in 1953 stood at Rs. 19,000. A sum of Rs. 1,790 was paid to sick and aged nurses. The Nursing Journal of India continued its publication.

Indian Medical Association

Membership of the Association now stands at 16,608 as against 15,573 in 1952. The number of branches similarly increased from 445 to 464.

The Association celebrated its Silver Jubilee during the Conference, where an Industrial and a Scientific Exhibition were opened. The Central Working Committee considered problems of medical interest as:—

1. The Compilation of a National Register of Scientific and Technical Personnel;
2. Developing a system for honorary medical officers;
3. Providing condensed courses of M.B.,B.S. for licentiates;
4. The enforcement of compulsory service in rural dispensaries;
5. The working of the Employees' State Insurance Scheme.

The members of the Association participated with various other bodies, as the Indian Nursing Council, Medical Benefit Council of the E.S.I. Corporation and the Drugs Technical Advisory Board, of the Government of India.

Due to the good offices of the Association, training facilities mostly of the nature of internship were made available to 35 doctors in the many United States and Canadian Hospitals through their Medical Associations and Hospitals.

Besides, the members took an active part in relief measures to the flood affected areas of Bihar, Assam, Bengal and Uttar Pradesh.

All India Medical Licentiates' Association

With a membership of about 4,000 and a network of more than 271 branches, the Association is continuing its many-sided activities, to good effect.

All India Dental Association

The 8th Annual Conference of the Association held in Bombay in May this year passed certain resolutions, which were:—

1. requesting all State Governments to create a regular State Dental Services on a par with the State Medical Service;
2. recommending all State Governments to take steps for compulsory dental inspection of school children by registered dental surgeons, once or twice a year.

Two candidates were selected for training at the Murry and Leonie Guggenheim Dental Clinic for 1953. A further grant was made by the United Trades (Lever Brothers) Calcutta of Rs. 7,500 for research on "Pan chewing and incidence of Periodontal disease" to determine how the anterior and posterior areas of the jaw were affected.

CHAPTER XV

World Health Organisations

The Government of India participated in the following international conferences during the year 1953.

(i) The Sixth World Health Assembly was held in Geneva in May 1953. The subjects which were taken by the Assembly for technical discussion were typhoid fever, tuberculosis and venereal diseases. Subjects on sanitation, medical education and training etc., were also discussed.

(ii) The Regional Committee for South East Asia sixth meeting was held at Bangkok, (Thailand) in September 1953. Delegates from 8 countries, namely, Afghanistan, Burma, Ceylon, India, Portuguese India, Indonesia, and Thailand attended the meeting.

(iii) The First Regional Malaria Conference in South East Asia at Bangkok under the auspices of the World Health Organisation from 21st to 24th September, 1953. The Director, Malaria Institute, India was deputed as a Government of India representative to attend the Conference. He was elected Vice-President.

(iv) The Third Regional Nutrition Meeting in South East Asia held in Bandung, Indonesia, from 23rd to 30th June, 1953. The representative of the Government of India attending the meeting was elected Vice-Chairman of the Committee. The Conference was attended by delegates from France, Indonesia, Japan, Netherland, Phillippines, Portugal Thailand, United Kingdom (Malaya, Fiji, Singapore) and Viet Nam.

The clinical types of malnutrition, endemic goitre, calcium intake and training of auxiliary personnel for carrying out practical nutrition programme were discussed.

(v) The Royal Sanitary Institute, London, Annual Health Conference at Hasting (United Kingdom) from 20th April to 1st May 1953. The Medical Adviser to the High Commissioner in London attended the conference.

(vi) The Central Council for Health Education, in London Weekend Seminar for Medical Officers of Health in London from 24th to 28th April, 1953. This was attended by the Medical Adviser to the High Commissioner for India in London and by the Health Education Officer, B.C.G. Vaccination Campaign, Tripura.

(vii) The Eight International Hospital Congress held in London from 25th to 30th May, 1953. The Medical Adviser to the High Commissioner for India in London and the Civil Surgeon, Punjab, attended the above Congress. The Union Ministry of Health was enrolled as Class 'A' member, *i.e.,* full member of the International Hospital Federation.

World Health Organisation

India is a member of the World Health Organisation since its inception and has been receiving valuable assistance from that organisation for its various health development programmes from the year 1949. The same year World Health Organisation Regional Office for South East Asia was established in New Delhi. During the year 1953 India received assistance worth U.S. $548,276 (*i.e.* Rs. 26,10,838 approximately) in the shape of experts, fellowships and some equipment. The Government of India's contribution to the World Health Organisation during the year 1953 was U.S. $273,055 (*i.e.* Rs. 13,00,262 approximately). A brief note on the programmes assisted by the World Health Organisation in 1953 follows:—

Maternity and Child Health Programme, All India Institute of Hygiene and Public Health, Calcutta

The programme started in June, 1953. The aim of the project is to develop the maternal child welfare section of the All India Institute of Hygiene and Public Health into a full department of Maternal and Child Health, which will provide training to students from India and other Asian countries. During the year 1953 assistance worth U.S.$12,914 was provided by the World Health Organisation.

Material and Child Health, Najafgarh

The programme started in January, 1950 and was completed by the end 1953. The object of the programme was to demonstrate work in rural area with emphasis on training programme.

Malaria and Food Production, Terai and Bhahar

This programme which started in May, 1951 was completed in May, 1953. It was the first World Health Organisation demonstration project of the kind.

Tuberculosis Control, Patna

The programme started in September, 1951 and was completed in December, 1953. A teaching training centre was established with World Health Organisation assistance.

Tuberculosis Control, Trivandrum

The programme started in May 1951 and was completed in March, 1953. A demonstration teaching and training centre was established with World Health Organisation assistance.

B.C.G. Vaccination

The programme started in July, 1951. The object was to integrate B.C.G. service with general tuberculosis preventive and control programmes. During the year World Health Organisation provided assistance worth U.S. $ 31,760.

Nursing Training, Calcutta

The programme started in June, 1952. The object was to assist in developing the School of Nursing at the Medical College Hospital, Calcutta, including midwifery and paediatric nursing. During 1953 assistance worth U.S. $ 25,763 was provided by the World Health Organisation.

Nursing Training Bombay

The programme started in September, 1953. World Health Organisation assisted in the education and training programme at the J. J. Hospital including Midwifery training.

Paediatric Nursing, Madras

The programme started in November, 1952 and was completed in December, 1953. World Health Organisation assisted in improving nursing and teaching facilities in the Paediatric Unit of Madras General Hospital.

Nursing Refresher Courses

With the World Health Organization assistance three refresher courses in nursing each of three months duration were arranged in India.

Venereal Disease Control

The programme started in September, 1951. During the year 1953 World Health Organization provided equipment to field teams and assisted in cardiolipin production and distribution. World Health Organization also helped in establishing a Venereal Disease Department, and Training Centre at the Madras General, Hospital.

Yaws Control, Madras, Hyderabad and Madhya Pradesh

The programme started in November, 1953. The object of the programme was to improve the health of the tribal people in the area and to reduce the incapacity caused by Yaws.

Anti-biotic Production Plant : D.D.T. Production plant : During the year 1953 World Health Organization provided assistance worth U.S. $ 47,503 and $ 110,585 for the Antibiotic production and D.D.T. Production Plant respectively. Both these programmes were transferred to the Technical Assistance Administration with effect from 1st July 1953.

Plague Control, Uttar Pradesh

The programme started in October, 1952. During 1953 World Health Organization assisted in the training of local workers and supplemented existing system of survey.

Industrial Hygiene, Calcutta

The programme started in September 1952. During 1953 World Health Organization provided a professor of physiology and industrial hygiene and also assisted Industrial Health Unit of the Indian Council of Medical Research.

Medical College, Trivandrum

The programme started in August, 1952. World Health Organization provided a Principal to help in developing a medical college at Trivandrum.

School of Tropical Medicine, Calcutta.

World Health Organization assisted to train a pharmacologist for teaching and research at the Calcutta School of Tropical Medicine and to develop a teaching and research centre there.

Establishment of a physiotherapy school in Bombay

World Health Organization provided physiotherapy experts and necessary equipment.

Visiting Team of Medical Scientist

A team of 14 professors of international standing representing a number of pre-clinical, clinical and public health specialities, spent two months in India conducting lectures, demonstrations and seminars and exchanging information on recent scientific advances in all the relevant specialities.

Professor of Pharmacology, Bombay

World Health Organization provided a Professor of Pharmacology to Seth G. S. Medical College, Bombay.

Pilot Studies in Family Planning

The programme started in May, 1952, with World Health Organization advising on survey and experimental studies.

Food Hygiene

In March, April, 1953 World Health Organization provided a consultant to advise on legislation for inspecting food of animal origin, modern slaughter-house practice and food borne disease in man.

United Nations Children Fund (UNICEF)

India has been receiving assistance mainly in the form of equipment and supplies from the UNICEF from the year 1948. During the year 1953 India received assistance worth U.S. $ 2,404,400 (*i.e.* Rs. 1,14,49,571 approximately) for the following programmes:—

Maternity and Child Health Programmes in the State of

	U.S. $
(*a*) West Bengal	306,000
(*b*) Bihar	265,800
(*c*) Uttar Pradesh	243,000
(*d*) Travancore-Cochin	97,400
(*e*) All India. For General Distribution	324,602
(2) Yaws Control. Hyderabad, Madhya Pradesh and Madras	39,000
(3) B.C.G. (All India)	125,000
(4) Tuberculosis Control, Bihar, Delhi, Travancore-Cochin	1,200
(5) Milk powder (All India)	64,000
(6) Dairy Plant, Bombay	225,000
(7) Relief and emergency supplies to the State of Madras, Travancore-Cochin, Bihar, West Bengal and Assam	714,000

The Government of India's contribution to the UNICEF during the year 1953 was Rs. 15,00,000 or U.S. $ 315,000 approximately.

Fellowships

The Central Selection Committee nominated twenty four students for the Technical Cooperation Administration fellowships, four for fellowships of the Rockefeller Foundation and five for the Colombo Plan fellowships. The subjects of fellowship covered Anatomy, Medical Education, Health Education, Pharmacology, Public Health Engineering, Anaesthesiology and Nursing.

The Virus Research Centre, Poona.—A joint project with the Indian Council of Medical Research and Rockefeller Foundation was formally opened in 1953. The programme of the Centre consists mainly of isolation and study of viruses of human importance which are transmitted by blood-sucking arthropods, and survey of human immunity to anthropods-borne virus diseases.

PART II

STATISTICAL ABSTRACTS

Table 1

Amount of Financial Relief sanctioned by the State Government in the form of Remission, suspense of revenue and loans and Gratuitous Relief.

State	Remission Rs.	Suspense of revenue and loans Rs.	Loans Rs.	Gratuitous Relief Rs.
1. Assam	64,379	..	7,47,465	5,52,552
2. Madras	81,29,191	27,01,212	4,94,64,175	1,01,30,000
3. Madhya Pradesh	2,47,609	33,26,157	67,66,000	..
4. West Bengal	40,909	2,07,900	51,71,000	52,34,522
5. Uttar Pradesh	23,15,705	2,42,533	1,50,84,344	11,83,900
6. Madhya Bharat	4,930	20,06,000	30,45,957	3,72,709
7. Pepsu	76,673	..	2,62,165	..
8. Saurashtra	30,793	1,47,60,519	74,72,427	19,200
9 Travancore Cochin	29,402	..	1,300	..
10. Bhopal	..	..	31,76,687	4,410
11. Coorg	20,331	..	1,11,110	..
12. Delhi	2,742	..	1,70,000	27,024
13. Vindhya Pradesh	4,826	..	3,87,217	51,900
14. Manipur	86,454	..	..	6,925
15. Andamans	..	..	24,493	..
16. Bombay	28,55,229	2,28,60,792	2,83,95,969	1,01,83,017

Table 2

Population density of certain countries

Country	Last Census date	Population	Estimates for 1953 (in thousands)	Density per K.M.
1. Netherlands	31-5-1947	..	10493	324
2. Belgium	31-12-1947	8512195	8778	288
3. Japan	1-10-1950	83199637*	86700	235
4. United Kingdom	8-4-1951	50212272	50857	208
5. Ceylon	20-3-1953	8098637	8155	124
6. Switzerland	1-12-1950	4714992	4877	118
7. India	1-3-1951	356879394	372000	113
8. Hungary	1-1-1949	..	9600	103
9. Denmark	7-11-1950	4281275	4369	102
10. France	10-3-1946	..	42860	78
11. Indonesia	7-10-1930	..	79900	54
12. China	..	..	463493 (for 1952)	48
13. Burma	3-3-1941	16823798	19045	28(1)
14. Egypt	25-3-1947	..	21935	22
15. U.S.A.	1-4-1950	97361	159629	20
16. Canada	1-6-1951	14009429	14781	1

*Provisional.

Table 3

Agencies registering Births & Deaths in certain States

Category	Reporting Agency	Registering Authority	Official Channel
Punjab	Head of the family	Municipality	Civil Surgeon-Director of Health Services.
Bihar	,,	,,	,,
Bengal	,,	,,	,,
Aimer	,,	,,	Municipality, Civil Surgeon
Coorg	,,	,,	,,
Delhi	,,	,,	Municipality-Medical Officer of Health-Director of Health Services.
Madhya Pradesh	,,	Police Station	Civil Surgeon-Director Services.
Punjab	Village Chawkidar/watch man	,,	,,
Uttar Pradesh	,,	,,	,,
Bihar	,,	,,	,,
Madhya Pradesh	,,	,,	,,
Ajmer	,,	,,	Police Station-Civil Surgeon
Coorg	,,	,,	,,
Delhi	,,	,,	,,
West Bengal	,,	Municipality	District Officer of Health Director of Health Services.
Bombay	,,	Police Station	Police Patil-Mamalatdar-Director Public Health
Madras	,,	Village Headman	Tehsildar-Director of Health Services.

Table 4

REGISTRATION IN DIFFERENT STATES IN INDIA

State	Districts where registration of births & deaths is compulsory in both urban and rural areas.	Districts where registration is compulsory in urban areas only	Districts where registration is voluntary in both urban and rural areas	Districts where registration is voluntary in rural araes only	Districts where registration of births and deaths does not exist	Remarks
1	2	3	4	5	6	7
1. Assam .		1. Cachar 2. Goalpara 3. Damrup 4. Darrang 5. Sibsagar 6. Lakhimpur 7. Nowgong	Registration is voluntary in rural areas.	All districts	Rural areas of Hill districts, *viz.*, United Khasi & Jaintia Hills District, Naga Hill District.	
2. B har . .	Compulsory	..	..	..	..	
3. Bombay . .	Registration of births and deaths is not compulsory in rural areas and non-municipal urban areas of the State. Registration is compulsory in all municipalities.					
4. Madhya Pradesh ..		Compulsory in all urban areas.	..	Registration is not compulsory in rural areas.	..	
5. Madras .	Compulsory .	..	..	..	..	Except certain back-ward areas and Hill tracts of Salem & North Arcot.
6 Orissa .	Not available	..	..	..	..	
7. Punjab .	Compulsory	..	..	..	..	
8 Uttar Pradesh.	Compulsory	..	..	..	..	

9.	West Bengal .	Compulsory	..	..	..	..	Except the Port, Fort and Maidan areas with the city which cover 8·4 sq. miles with a population 27,756 (1951 census).
10.	Andhra . .	Anantapur, Cuddapah, Chittoor, Nellore, Krishna and Guntur.	..	..	..	..	(1) Registration is compulsory in both urban & rural areas of East Godavari & West Godavari with the exception of certain rural agency parts where information regarding registration is carried out. (2) Registration is compulsory both in rural & urban areas of Srikakulam and Visakhapatnam with the exception of certain rural agency parts where registration could not be carried out as there are no literate village officers.
11.	Ajmer . .	Not available	..	..	..	..	
12.	Coorg . .	..	Sehore district where registration is compulsory in Bhopal & Sehore municipalities only.	Raisen District	Sehore District	..	
13.	Bhopal . .	Not available	..	..	..	..	
14.	Delhi . .	Compulsory	..	..	..	..	
15.	Himachal Pradesh	Compulsory	..	..	..	..	

1	2	3	4	5	6	7
16 Kutch . .	Not available	..	..	..	..	
17 Manipur .	..	..	Not compulsory	..	..	
18 Tripura .	Not available	.	..	..	..	
19 Vindhya Pradesh.	Not available	.	..	..	..	
*20 Hyderabad .	..	..	..	..	..	*Since 1st January, 1955, registration is compulsory in rural areas.
21 Jammu & Kashmir.	Not available	..	..	..	..	
22 Madhya Bharat	..	..	Compulsory	..	..	
23 Mysore . .	Compulsory	..	..	..	..	
24 Travancore-Cochin.	Compulsory	..	..	..	..	
25 Pepsu . .	Compulsory	..	..	..	..	
*26 Rajasthan .	..	..	..	..	..	*Neither compulsory nor voluntary.
27 Saurashtra .	Not available.	..	..	..	..	
28 Andaman & Nicobar lands.	Not available	..	..	..	..	

Table 5

BIRTH RATES & SEX-RATIO FOR THE PERIOD 1949-53

Name of the State	Year	Birth rate per 1,000 of population			Number of males born per 100 female children
		Rural	Urban	total	
1	2	3	4	5	6
1 Assam	1949	15·1	15·9	15·1	109
	1950	14·1	16·7	14·2	110
	1951	14·3	16·3	14·4	108
	1952	14·7	16·0	14·8	108
	1953	..	..	13·8	108
2 Bihar	1949	18·2	8·3	17·5	104
	1950	18·6	7·4	17·9	108
	1951	18·2	7·8	18·1	111
	1952	19·3	9·1	18·4	109
	1953	19·6	10·5	18·9	..
3 Bombay	1949	31·2	25·4	29·4	107
	1950	33·2	26·3	31·0	107
	1951	36·8	27·9	34·0	107
	1952	34·6	30·5	33·3	108
	1953	35·1	29·7	33·4	106
4 Madhya Pradesh	1949	30·2	31·5	30·4	108
	1950	28·3	30·9	28·6	109
	1951	28·5	28·5	28·6	110
	1952	25·3	27·6	25·6	111
	1953	28·6	28·3	28·5	109
5 Madras	1949	30·5	33·9	31·2	107
	1950	29·7	31·8	30·1	106
	1951	27·1	31·4	28·9	106
	1952	29·0	33·0	29·8	106
	1953	25·0	31·4	26·4	106
6 Orissa	1949	26·4	27·6	26·6	108
	1950	27·4	29·2	27·4	108
	1951	24·7	30·9	25·0	109
	1952	27·0	24·7	27·8	106
	1953	..	..	..	..
7 Punjab	1949	41·7	28·7	39·2	116
	1950	40·3	29·9	38·3	115
	1951	42·0	30·0	39·7	114
	1952	43·0	32·5	41·0	114
	1953	41·2	32·7	39·6	114
8 Uttar Pradesh	1949	20·3	31·9	21·9	118
	1950	19·3	31·9	21·0	119
	1951	17·5	34·9	19·9	120
	1952	15·6	29·3	17·5	120
	1953	15·4	29·5	17·4	121

Table 5—*Continued.*

	1	2	3	4	5	6
9	West Bengal . .	1949	20·8	15·6	19·7	108
		1950	18·4	17·5	18·2	109
		1951	22·2	18·5	21·3	108
		1952	23·6	18·7	22·6	109
		1953	23·8	18·9	22·7	108
10	Ajmer . . .	1949	26·0	28·8	26·6	124
		1950	22·9	37·8	29·2	115
		1951	25·6	36·9	30·5	115
		1952	21·2	22·6	21·8	120
		1953	..	..	..	..
11	Coorg . . .	1949	12·8	80·8	17·6	111
		1950	12·9	72·2	17·1	106
		1951	11·0	78·2	16·8	105
		1952	11·3	82·5	16·4	118
		1953	..	..	16·0	114
12	Delhi . . .	1949	33·3	29·2	30·0	111
		1950	35·8	30·7	31·6	111
		1951	40·0	31·6	33·1	111
		1952	37·5	29·0	30·5	112
		1953	37·0	30·9	31·9	..
13	Andhra . . .	1953	25·9	27·2	26·1	..
14	Hyderabad . . .	1952	..	..	..	..
		1953	..	..	..	..
15	Mysore . . .	1952	13·5	25·4	16·5	..
		1953	13·0	26·9	16·5	105
16	Madhya Bharat . .	1952	7·3	19·6	9·6	..
		1953	5·9	20·0	8·6	119
17	Pepsu	1952	..	..	20·4	..
		1953	..	..	18·3	126
18	Rajasthan . . .	1952	..	..	..	105
		1953	..	..	..	..
19	Saurashtra . . .	1952	3·3	11·4	6·1	..
		1953	2·8	11·6	5·8	..
20	Travancore-Cochin .	1952	23·6	23·5	23·6	..
		1953	22·4	21·1	22·2	..
21	Bhopal . . .	1952	21·6	19·9	21·4	..
		1953	18·2	20·3	18·5	118
22	Himachal Pradesh .	1952	19·3	15·7	19·2	..
		1953	18·8	19·0	18·8	112
23	India . . .	1951	24·8	27·8	24·9	111
		1952	24·8	27·9	25·4	111
		1953	24·2	27·3	24·8	..

..Not available.

Table 6

Table showing the death rates in various States in India for 1952 *and* 1953

		Death rate per mille 1952	1953
1	Ajmer	17·3	..
2	Andhra	..	16·3
3	Bihar	9·8	10·0
4	Bombay	16·8	17·5
5	Coorg	7·9	8·8
6	Delhi	9·9	10·3
7	Madhya Pradesh	17·2	21·3
8	Madras	25·0	17·0
9	Mysore	7·1	7·8
10	Orissa	34·4	32·1
11	Punjab	17·1	18·6
12	Uttar Pradesh	10·8	11·0
13	West Bengal	10·5	10·2
14	Assam	7·1	..
15	Himachal Pradesh (including Bilaspur)	..	11·6
16	Hyderabad	..	..
17	Travancore-Cochin	6·1	6·5
18	Andamans	..	..
19	Bhopal	12·4	13·7
20	Kutch	..	..
21	Madhya Bharat	6·5	5·7
22	Manipur	4·9	4·3
23	Pepsu	8.2	9·1
24	Rajasthan	..	..
25	Saurashtra	..	..
26	Tripura	1·5	1·5
27	Vindhya Pradesh	..	..
28	India	12·1	11·2

.. Not available

Table 7

INFANT MORTALITY RATE

	State	Year	Deaths	Rate per mille of live births
1	Ajmer	1950	2,430	121·1
		1951	1,899	89·4
		1952	2,151	139·2
		1953	..	..
2	Andhra	1953	70,271	129·2
3	Bihar	1950	57,365	80·3
		1951	65,097	89·3
		1952	52,231	68·9
		1953	54,897	70·6
4	Bombay	1950	1,39,646	126·7
		1951	1,42,633	117·2
		1952	1,42,843	110·3
		1953	1,47,208	117·6
5	Coorg	1950	243	63·0
		1951	216	59·6
		1952	194	49·8
		1953	229	57·2
6	Delhi	1950	5,231	98·1
		1951	4,926	84·0
		1952	4,897	86·7
		1953	5,519	89·0
7	Madhya Pradesh	1950	1,18,556	196·1
		1951	1,17,908	193·9
		1952	92,711	168·5
		1953	1,04,370	169·2
8	Madras	1950	2,17,641	130·1
		1951	1,86,306	118·6
		1952	1,83,554	108·2
		1953	11,889	113·8
9	Mysore	1951	..	..
		1952	11,153	72·8
		1953	12,304	78·9
10	Orissa	1950	34,131	157·6
		1951	37,363	188·8
		1952	59,775	159·2
		1953	54,943	153·3
11	Punjab	1950	76,145	160·3
		1951	62,254	123·4
		1952	67,621	126·6
		1953	70,135	133·1
12	Uttar Pradesh	1950	1,36,438	104·3
		1951	1,61,934	129·3
		1952	1,44,214	129·1
		1953	1,36,143	121·6

INFANT MORTALITY RATE—(*Continued*)

	State	Year	Deaths	Rate per mille of live births
13	West Bengal	1950	56,374	126·2
		1951	58,140	109·5
		1952	56,299	99·6
		1953	54,302	94·1
14	Assam	1950	11,061	100·5
		1951	10,113	89·5
		1952	9,719	82·6
		1953	..	..
15	Himachal Pradesh	1951	..	..
		1952	..	..
		1953	2,172	103·4
16	Travancore-Cochin	1951	..	..
		1952	9,283	41·4
		1953	8,498	39·5
17	Andaman	1951	..	..
		1952	22	62·7
		1953	21	34·1
18	Bhopal	1951	..	..
		1952	3,007	166·7
		1953	..	..
19	Kutch	1951	..	..
		1952	214	127·6
		1953	..	..
20	Manipur	1951	..	..
		1952	93	28·0
		1953	46	..
21	Pepsu	1951	..	..
		1952	5,951	83·1
		1953	5,116	80·6
22	Tripura	1951	..	..
		1952	112	77·2
		1953	..	..
23	India	1951	8,48,783	122·5
		1952	8,46,044	115·9
		1953	8,37,108	118·8

.. Not available.

Table 8

Infantile Mortality in different countries in 1953

Country	Rate per mille.
1. India	117·8
2. Burma	113·3
3. Ceylon	71·2
4. Japan	48·9
5. France	41·9
6. United States	27·7
7. United Kingdom	27·6
8. Newzealand	25·7

Table 9

Percentage of Infantile Deaths registered from Principal Causes in the Corporations of Bombay and Calcutta

	Bombay					Calcutta	
	1949	1950	1951	1952	1953	1949	1950
Smallpox	0·83	0·39	0·45	0·2	0·37	3·49	14·62
Measles	0 59	0·32	0·49	0·1	0·36	..	..
Malaria	0·02	0·01	0·04	0·04	0·00	0·04	..
Fevers	1·37	0·53	0·92	0·9	0·98	..	..
Dysentery & Diarrhoea	5·87	5·74	6·10	7·1	7·36	13·45	12·87
Premature birth, debility, etc.	53·26	55·20	54·17	51·9	49·32	29·90	23·13
Respiratory	26·27	25·79	25·54	27·3	29·78	22·53	19·47
Cholera	..	..	..			0·55	0·94
Marasmus	..	..	..	..	..	5·80	5·07
Tetanus	..	..	..	..	..	2·40	0·60
Infantile liver	..	..	..	..	..	1·10	0·73
Convulsions	1·89	2·68	2·33	2·4	1·91	..	..
Poliomyelitis	0·11	0·09	0·03	0·0	0·10	..	..

.. Not reported.

Table 9—(*continued*)

Percentage of Infantile Deaths registered from Principal Causes in Madras Corporation.

	1950	1951	1952	1953
Smallpox	1·93	1·08	0·24	0·21
Malaria	..	..	0·02	0·01
Fevers	3·60	3·53	3·36	3·85
Dysentery & Diarrhoea	11·19	11·12	13·79	12·81
Premature birth, debility, etc.	31·70	32·36	34·09	31·91
Nervous system	7·10	5·37	5·00	4·97
Respiratory	26·20	32·05	29·80	3·064
Cholera	..	..	0·02	0·4
Diptheria	..	..	0·22	0·26

Table 10

Maternal Deaths and Maternal Mortality Rates for different States in India during 1953

State	Death			Rate per mile of live & still		
	Total	Rural	Urban	Total	Rural	Urban
1. Andhra	3,688	..	..	6·8	..	..
2. Bombay	6,106	4,822	1,284	4·9	5·4	3·6
3. Madras	5,351	3,860	1,491	5·5	5·4	5·7
4. Orissa	42(*b*)	..	..	..	..	..
5. Madhya Pradesh	3,815	3,214	601	6·2	6·1	7·0
6. Punjab	574	432	142	1·1	0·97	1·7
7. Uttar Pradesh	2,446	1,516	930	2·2	1·8	3·5
8. Coorg	11	10	1	2·8	..	..
9. Delhi	145	..	..	2·3	..	..
10. West Bengal	3,329	2,802	527	..	..	..
11. Madhya Bharat	452	380	72 (*a*)	6·5	9·7	2·4
12. Rajasthan	..	..	124	..	..	10·5
13. Mysore	958	..	..	0·1	..	..
14. Travancore-Cochin	602	464	138	2·8	2·6	4·0
15. Bhopal	41	5	36	2·6	0·39	12·3
16. Manipur	22	13	9	6·4	5·9	7·3

*The rates calculated are purely provisional.
(*a*) for Municipal areas only.
(*b*) for Urban areas only.

Table II

Showing details of States affected by Smallpox in 1953

State	No. of districts affected	Cases	Deaths	Case fatality rate	Vaccination	Revaccination
Andhra . .	All	3,539	674	19	..	..
Assam . .	5	119	36	30	..	..
Bihar . .	All	2,235	243	11	73,22,087	26,22,394
Bombay . .	All	7,442	2,112	28	10 lakhs	15 lakhs
Madhya Pradesh .	All	2,753	784	32	4,87,224	5,23,459
Madras . .	..	6,703	1,493	22	..	..
Punjab . .	All	3,558	609	17	5,11,372	21,21,534
Delhi . .	..	477	154	..	43,478	8,15,110
Coorg . .	..	14	3	..	..	..
Himachal Pradesh .	3	90	31	..	51,339	2,00,264
Rajasthan . .	All	2,745	897	..	4,47,772	3,70,782
pepsu . . .	All	2,634	915	35	1,52,516	3,90,385
Vindhya Pradesh .	All	300	..	..	32,415	..
Travancore-Cochin .	..	1,478	522	35	..	..
Madhya Bharat .	..	1,048	331	32	1,11,912	31,500
Mysore . .	10	2,799	1,177	..	9,16,246	..
		37,934	10,071		1,10,76,361	85,75,437

Showing Registration of births and Primary Vaccination, State-wise in 1953

State	No. of births Registered	No. of Primary Vaccination	2 as % of 1
Bihar	7,77,432	73,22,087	941
Bombay	12,52,019	10,00,000	79·9
Madhya Pradesh	6,16,666	4,87,224	79·0
Punjab	5,26,845	5,11,372	97·1
Delhi	61,829	43,478	70·3
Himachal Pradesh	21,082	51,339	243·5
Rajasthan	11,789	4,47,772	3,798·2
Pepsu	64,248	1,52,516	237·4
Madhya Bharat	69,634	1,11,912	169·7
Mysore	1,56,151	9,16,246	586·8
	35,57,695	1,10,43,946	

CHOLERA

Table 12

State	Districts affected	Cases	Deaths	Case fatality rate	Deaths as % of total	Peak	No. of Inoculations
				%	%		
Andhra . .	8	30,858	15,360	50	2·8	August, September.	25 lakhs
Bihar . .	5	..	..	..	4·3	August	99,41,097
Bombay . .	All but three	36,066	11,704	32	2·3	,,	50 lakhs
Madhya Pradesh	All but 1	44,844	17,786	40	3·4	Summer	37,68,336
Madras . .	All	..	..	..	2·5	January & November	..
Orissa . .	..	..	3,708	..	1·6	..	..
Uttar Pradesh .	6	..	..	..	1·6	..	29,82,866
West Bengal .	All except Darjeeling.	..	..	..	3	June	..
Punjab . .	Just one village.	9	5	..	..	..	1,28,315
Bhopal . .	2	762	293	43	2·5	July	36,768
Tripura .	..	17	9	..	..	December	9,977
Rajasthan .	2 Divisions	..	..	..	..	..	1,29,536
Madhya Bharat	2	364	193	54	0 4	..	..
Mysore . .	10	3,235	1,473	46	1·8	July, August & December.	9,00,169
Travancore-Cochin .	..	..	..	..	2	..	..
Vindhya Pradesh	8	1,934	837	43	..	..	3,43,751
		1,18,089	51,368				2,57,40,815

Table 13

Table showing the percentage of fever deaths among the local deaths and the percentage of Malaria deaths among "fever deaths" for 1952 and 1953

State	% of fever deaths among total deaths		% of Malaria deaths among fever deaths	
	1952	1953	1952	1953
Andhra	..	31	..	3·3
Bihar	79	76	..	..
Delhi	25	22	..	..
Madhya Pradesh	54	60	..	80
Bombay	40	36	..	12·3
Coorg	43	33	..	..
Madras	22	17	3·2	2·1
Mysore	37	36	47·7	48·2
Orissa	59	62	..	..
Punjab	73	75	1·6	1·8
Uttar Pradesh	67	69	31·5	24·6
West Bengal	43	43	27·7	25·6
Assam	61	59	..	..
Himachal Pradesh	72	72	..	..
Bhopal	89	86	..	..
Madhya Bharat	38	38	..	..
Manipur	36	45	23·3	24·5
Rajasthan	..	39	..	..

Table 14

National Malaria Control Scheme 1953-54

Name of the State	No. of Control units (Malaria)	
	Units allotted	Units actually functioning
Andhra	2	2
Assam	5	Nil
Bihar	7	7
Bombay	15	15
Madhya Pradesh	8	8
Madras	2	2
Orissa	2	2
Punjab	4	4
Uttar Pradesh	5	5
West Bengal	16	16
Hyderabad	4	4
Jammu & Kashmir	1	Nil
Madhya Bharat	2	2
Mysore	5	5
Pepsu	2	2
Rajasthan	..	..
Saurashtra	1	1
Travancore-Cochin	1	1
Ajmer	2/3	2/3
Bhopal	3/4	3/4
Coorg	1/3	1/3
Delhi	2	2
Himachal Pradesh	3/4	3/4
Kutch	1/2	1/2
Manipur	1/2	1/2
Tripura	1/2	1/2
Vindhya Pradesh	2	2
Andaman & Nicobar Islands	..	..
	90	84

Table 15

Anti-Malaria Drugs used by the States in 1953-54

State	Quinine	Cinchona febrifuge	Totaquina	Other Cinchona alkaloids	Quinine substitutes
	lbs.	lbs.	lbs.	lbs.	lbs.
Andhra . . .	58	..	..	..	35
Assam . . .	3,820	983	5	37	819
Bihar . . .	1,520	..	110	..	2,357
Bombay . . .	1,221	105	97	446	1,509
Madhya Pradesh . .	410	122	46	53	183
Madras . . .	4,219	790	1,574	197	33
Orissa . . .	578	331	40	52	219
Punjab . . .	1,779	..	101	43	941
Uttar Pradesh . . .	4,128	1,407	73	8	2,372
West Bengal . .	1,810	1,110	1,215	..	..
Pepsu . . .	199	4	67	6	..
Coorg . . .	55	38	16	6	11

Table 16

Diarrhoea and Dysentery

State	Years	Percentage of deaths due to Diarrhoea and Dysentery among deaths due to all the causes	Index of deaths due to Dysentery and Diarrhoea with base as mean of the deaths due to all causes for 1949-52	Mortality rate to Dysentery and Diarrhoea per mille.	Index of mortality rate with base as the mean of mortality rate for 1949-52
1	2	3	4	5	6
Andhra	1953	7.1		1.2	
Assam	1949	8.3	123.07	0.7	103.7
	1950	7.4	104.65	0.6	88.9
	1951	6.3	82.80	0.5	74.1
	1952	6.8	89.52	0.9	133.3
	1953	6.2	86.11	0.4	59.3
Bihar	1949	0.6	91.85	0.08	109.6
	1950	0.8	126.85	0.09	123.3
	1951	0.5	93.35	0.06	82.2
	1952	0.6	88.02	0.06	82.2
	1953	0.7	112.00	0.07	95.9
Bombay	1949	3.4	107.75	3.2	271.2
	1950	3.9	92.16	0.6	42.1
	1951	3.3	94.67	0.5	42.4
	1952	4.2	105.42	0.5	42.4
	1953	3.8	95.6	0.7	59.3
Madhya Pradesh	1949	3.5	100.22	0.9	120.0
	1950	3.4	97.48	0.7	83.3
	1951	4.2	116.12	0.8	196.7
	1952	3.3	86.17	0.6	80.0
	1953	3.6	83.44	0.7	93.3
Madras	1949		83.44	1.0	.667
	1950		110.36	1.3	86.7
	1951	7.1	98.63	1.8	120.0
	1952	7.9	107.58	1.9	126.7
	1953	8.2	117.56	1.3	86.7
Orissa	1949	8.1	109.66	1.8	109.1
	1950	7.9	100.31	1.7	103.0
	1951	5.5	70.74	1.2	72.7
	1952	5.7	119.29	1.9	115.2
	1953	5.4	79.41	1.7	103.0
Punjab	1949	1.5	89.73	0.3	109.1
	1950	1.4	107.47	0.3	109.1
	1951	1.4	85.86	0.2	72.7
	1952	1.9	116.97	0.3	109.1
	1953	2.0	129.03	0.4	145.5

Table 16—*(continued)*

1	2	3	4	5	6
Uttar Pradesh . . .	1949	1.8	63.74	0.2	66.7
	1950	1.5	55.52	0.2	66.7
	1951	4.2	137.46	0.4	133.3
	1952	4.6	149.21	0.4	133.3
	1953	4.9	161.98	0.5	166.6
West Bengal . . .	1949	6.2	111.81	1.0	121.2
	1950	6.9	120.20	1.0	121.2
	1951	5.9	89.65	0.7	84.8
	1952	6.1	78.28	0.6	72.7
	1953	6.7	106.77	0.7	84.8
Ajmer	1949	2.2	94.13	0.4	106.7
	1950	2.2	96.33	0.4	106.7
	1951	2.2	71.06	0.2	53.3
	1952	3.1	138.82	0.5	133.3
	1953	..	..	..	..
Coorg	1949	3.0	43.24	0.3	48.0
	1950	4.7	52.70	0.3	48.0
	1951	8.0	93.24	0.6	96.0
	1952	..	211.48	1.3	208.0
	1953	11.1	..	1.0	160.0
Delhi	1949	7.0	103.51	0.7	116.7
	1950	5.5	94.08	0.6	100.0
	1951	5.7	84.37	0.5	83.3
	1952	..	117.04	0.6	100.0
	1953	8.5	145.39	0.8	133.3
Indore	1949	..	92.18	0.60	99.2
	1950	..	100.23	0.60	99.2
	1951	4.4	100.72	0.62	102.5
	1952	4.7	106.88	.60	99.2
	1953	5.1	120.27	0.59	97.5
Mysore	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	..	..
	1952	10.2	..	0.7	..
	1953	11.1	..	0.9	..
Himachal Pradesh . .	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	..	..
	1952	3.0	..	0.2	..
	1953	5.3	..	0.6	..
Travancore-Cochin . .	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	..	..
	1952	5.4	..	0.3	..
	1953	6.6	..	0.4	..
Bhopal	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	.	..
	1952	2.0	..	0.2	..
	1953	2.4	..	0.3	..
Madhya Bharat . .	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	..	..
	1952	5.0	..	0.3	..
	1953	5.4	..	0.30	..
Manipur	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	..	..
	1952	7.5	..	0.3	.
	1953	5 5	..	0.2	..

Table 16—(*concld.*)

1	2	3	4	5	6
Pepsu	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	..	..
	1952	4.0	..	0.3	..
	1953	3.3	..	0.3	..
Rajasthan	1949	..	..	..	.
	1950	..	..	..	..
	1951	..	..	..	..
	1952	..	..	..	..
	1953	6.9	..	0.05	..
Saurashtra	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	..	..
	1952	5.5	..	0.2	..
	1953	6.0	..	0.2	..
Tripura	1949	..	..	..	..
	1950	..	..	..	..
	1951	..	..	..	..
	1952	14.0	..	0.20	..
	1953	20.2	..	0.31	..

.. Not available.

Table 17

Statement showing the percentage of deaths due to respiratory diseases among the total deaths due to all causes in the different States during the years 1952 *and* 1953

Sl. No.	State	Percentage	
		1952	1953
1	Andhra	£	6.92
2	Assam	5·31	6 63
3	Bihar	0·07	0·80
4	Bombay	15·49	15·24
5	Madhva Pradesh	6·56	6·54
6	Madras	10·46	10·33
7	Orissa	2·57	2·84
8	Punjab	12·23	11·17
9	Uttar Prdesh	7·79	7·42
10	West Bengal	11·42	11·13
11	Madhya Bharat	10·36	12·01
12	Mysore	3·78	8·11
13	Pepsu	2·41	1.21
14	Rajasthan	£	13·37
15	Saurashtra	10·23	10·17
16	Tranvancore-Cochin	4·30	10·58
17	Ajmer	1·37	
18	Bhopal	2·42	1.72
19	Coorg	7·36	5.61
20	Delhi	28·74	39.08
21	Himachal Pradesh	6·61	4.89
22	Manipur	13·06	15.67
23	Tripura	10·06	10.14

NOTES :—

£Not available.

££State of Andhra came into existence in 1953 only. Information is not available for Hyderabad, Jammu & Kashmir, Vindhya Pradesh and Andaman & Nicobar Islands.

Table 18

Statement showing the number of Venereal Diseases patients treated in the various States during 1953.

State	Indoor					Out-door					Total
	Syphilis		Gonor-rhoea	Chancre-oid	Other venereal diseases	Syphilis		Gonor-rhoea	Chan-croid	Other Veneral Diseases	
	Acquired	Congenital				Acquired	Congenital				
1	2	3	4	5	6	7	8	9	10	11	12
Andhra . .	2,633	796	2,942	231	2,198	30,047	22,784	51,976	1,884	30,514	1,46,006
Assam . . .	176	34	131	..	226	1,262	68	821	14	1,146	3,878
Bihar . . .	1,029	520	986	117	619	24,166	7,213	16,135	1,852	13,020	65,657
Bombay . . .	1,317	54	459	142	545	38,531	2,624	21,693	10,703	26,193	1,02,261
Madhya Pradesh .	1,439	254	553	264	1,181	38,659	1,680	12,205	917	3,083	60,235
Madras . . .	3,354	977	1,523	290	2,708	36,633	9,576	68,234	7,559	57,658	1,88,512
Orissa . . .	1,196	138	637	48	319	25,434	2,217	14,253	825	6,122	51,189
Punjab . . .	195	45	304	2	670	3,942	562	2,903	76	5,222	13,921
Uttar Pradesh . .	1,551	668	1,242	114	856	23,700	19,708	29,920	5,348	16,932	86,275
West Bengal . .	853	..	450	24	368	10,658	881	8,262	1,607	17,591	40,694

Hyderabad .	256	26	56	24	..	3,318	68	6,212	22	18	10,010
Jammu & Kashmir .	..	..	..	..	..	..	..	..	..	..	..
Madhya Bharat .	125	49	75	3	168	2,917	1,415	2,937	680	1,159	9,525
Mysore . .	248	16	536	28	77	6,850	76	2,982	621	97	11,531
Pepsu . . .	81	..	71	2	16	5,475	302	2,473	255	1,208	9,884
Rajasthan . .	326	54	62	4	57	2,418	183	1,521	1,134	2,899	8,658
Saurashtra . .	196	14	203	23	226	1,189	144	1,114	182	706	4,087
Travancofe-Cochin .	200	46	..	..	..	2,406	..	379	..	..	3,031
Ajmer . . .	20	2	18	5	37	445	136	316	121	123	1,223
Bhopal . . .	43	..	89	..	..	582	10	387	15	38	1,164
Coorg . . .	134	6	54	..	12	233	20	154	10	17	640
Delhi . . .	13	4	5	3	21	5,929	240	1,658	41	51	7,965
Himachal Pradesh .	276	84	68	7	66	1,255	392	1,967	14	853	4,982
Kutch . . .	23	..	9	6	..	121	..	110	76	..	345
Manipur . .	77	14	62	28	1	820	97	848	26	14	1,987
Tripura . .	5	..	17	..	..	159	16	489	33	127	846
Vindhya Pradesh .	115	18	54	..	29	1,885	152	1,357	..	946	4,556
Andaman & Nicobar Islands . .	39	2	6	..	..	233	2	96	..	..	378
GRAND TOTAL .	15,920	3,821	10,612	1,365	10,397	2,69,267	70,566	2,42,402	29,211	1,85,827	2,39,439

Table 19

Statement showing the number of leprosy patients treated in the various States in India, during the year, 1953

State	No. of patients treated	No. of patients discharged as					
		Cured	Non-infactious	Symptom free	Disease arrested	Apparently cured	Decidedly improved
1	2	3	4	5	6	7	8
Assam	1,383	5	109	89	40	45	59
Bihar	29,881	263	1054	582	652	838	3,482
Bombay	14,403	128	611	647	1299	659	1971
Madhya Pradesh	2,176	..	223	157	79	1	..
Madras	90,968	358	1466	459	1477	3151	2,558
Orissa	1,137	40	60	100	..	..	..57
Punjab	413	..	13	2	2	10	50
Uttar Pradesh	16,915	52	210	213	555	102	685
West Bengal	33,470	435	2189	1731	2280	676	4,307
Andhra	41,351	1297	8780	1058	10575	6685	65
Hyderabad	4,999	3	144	14	78	69	453
Jammu & Kashmir	Not received						
Madhya Bharat	15,075	2	51	3	71	28	24
Mysore	355	33	80	26	50	20	5
Pepsu	139	5	10	8	5	13	148
Rajasthan	963	78	15	..	..	4	6
Travancore-Cochin	2,503	78	231	31	42	50	1,466
Saurashtra	126	5	6	8	5	5	56
Ajmer	6	..	..	..	..	..	..
Bhopal	40	..	..	..	22	..	..
Coorg	Not available						
Delhi	253	..	..	4	201	..	48
Himachal Pradesh	409	..	7	8	8	5	..
Kutch	Nil						
Manipur	90	..	3	..	9	4	..
Tripura	3	..	..	..	..	.. 2	1
Vindhya Pradesh	96	..	..	..	..	..	13
Andaman & Nicobar Islands	Nil						
TOTAL	2,57,200	2,782	15,184	5,140	17,360	12,367	15,454

Table 20

Statement showing the number of patients treated for eye diseases and eye operations performed in various States during 1953.

States	Patients treated		Operations performed	
	Indoor	Out-door	Major	Minor
1	2	3	4	5
Andhra	3,583	3,03,997	1,323 (281)	7,486
Assam	1,522	17,405	984	248
Bihar	12,765	2,45,062	6,487	2,571
Bombay	19,878	4,38,936	14,924	8,736
Madhya Pradesh	11,955	3,50,636	6,516	3,596
Madras	22,534	695,687	16,862	11,671
Orissa	15,768	1,91,092	904	4,591
Punjab	33,825	5,44,776	21,288	16,238
Uttar Pradesh	30,777	10,44,141	13,772	79,405
West Bengal	58,824	3,57,195	7,636	12,083
Hyderabad	5,592	2,81,434	2,991	4,948
Jammu and Kashmir	25,517	..	968	1,222
Madhya Bharat	4,894	58,019	3,878	2,200
Mysore	5,770	5,56,158	—12,005	..
P.E.P.S.U.	3,167	4,00,362	738	2,199
Rajasthan	7,634	8,60,997	—5,955	..
Saurashtra	12,502	1,01,479	1,893	1,446
Travancore-Cochin	7,254	1,10,842	4,746	8,294
Ajmer	406	34,897	235	281
Bhopal	6,248	13,121	272	287
Coorg	284	1,449	16	19
Delhi	9,716	2,73,937	6,406	5,606
Himachal Pradesh	8,151	19,455	542	1,100
Kutch	405	35,360	540	1,181
Manipur	73	12,276	15	45
Tripura	321	11,975	..	610
Vindhya Pradesh	818	34,555	218	544
Andaman and Nicobar Islands	128	2,394	1	13

Table 21

Statement showing the number of persons tuberculin tested and B.C.G. Vaccinated during the year 1953 (State-wise).

State	Tested	Vaccinated
Andhra Pradesh	No work was done during 1953	
Assam	1,77,224	1,01,464
Bihar	14,59,620	6,97,152
Bombay	3,93,960	60,765
Madhya Pradesh	3,20,132	1,10,027
Madras	30,800	8,195
Orissa	2,38,366	62,553
Punjab	10,34,384	2,94,351
Uttar Pradesh	13,46,085	3,81,460
West Bengal	11,70,544	4,55,207
Hyderabad	15,29,818	2,43,518
Kashmir	1,62,365	46,210
Madhya Bharat	5,67,108	1,62,308
Mysore	7,86,087	2,93,876
Pepsu	6,49,785	1,73,747
Rajasthan	3,65,074	84,093
Saurashtra	3,21,343	73,233
Travancore-Cochin	6,58,477	2,55,235
Ajmer	1,24,518	25,565
Bhopal	64,588	25,565
Coorg	No work was done during 1953.	
Delhi	8,20,735	1,84,416
Himachal Pradesh	91,492	44,761
Kutch	No work was done during 1953.	
Manipur	97,332	46,933
Tripura	59,902	20,241
Vindhya Pradesh	6,328	1,580
TOTAL	1,24,76,062	38,51,745

Table No. 24

Statement showing the expenditure incurred in various States on Tuberculosis, Venereal Diseases, Leprosy and Eye Hospitals in the year 1953

Serial No.	Name of the States	Tuberculosis	Venereal Diseases	Leprosy	Eye Hospital	Remarks
	1	2	3	4	5	6
		Rs.	Rs.	Rs.	Rs.	
1.	Andhra	*6,60,902	Not separately kept.	2,55,648	..	*This does not include expenditure on T.L. Clinics in Government General Headquarters Hospitals as no separate accounts are maintained.
2.	Assam	3,30,447	Not separately maintained.	1,85,681	25,000	
3.	Bihar	0,83 494	77,012	4,92.676	..	
4.	Bombay	6,23,677	*1,53.808	12,11,081	3,11,275	*This is not for all the institutions, as no separate account was maintained.
5.	Madhya Pradesh	211,913	.	3,68,765	79.324	
6.	Madras	21.69.047	1,83,000	10,48,490	4.59.170	
7.	Orissa	3,27,798	..	2,16.805	.	
8.	Punjab	Not available	Not available	1,53.970	20,892	
9.	Uttar Pradesh	8.52,100	Not separately maintained.	4 49.044	6,89.719	
10.	West Bengal	Not available	3,20,568	6,97,660	..	
11.	Hyderabad	5.58.414	Not separately maintained	2,51,471	1,44.928	
12.	Jammu and Kashmir	2,33,010	22,000	.	..	

1	2	3	4	5	6	7
13.	Madhya Bharat	Not available	Not available	44,646 (Excluding Dhar)	..	
14.	Mysore	Not available	Not available	No separate head of expenditure maintained.	1,60,042	
15.	P.E.P.S.U.	Not available	13,880	42,681	..	
16.	Rajasthan	Not available	Not separately maintained	29,143	Not available	
17.	Saurashtra	2,27,300	Not available	35,052	..	
18.	Travancore-Cochin	5,15,885	Not available.	9,05,180	77,192	
19.	Ajmer	4,68,478	Not available	..	..	
20.	Bhopal	2,27,300	Not available	10,052	..	
21.	Coorg	Not available	Not available	..	..	
22.	Delhi	10,07,694	*11,420	5,788	20,344	*No special account maintained for V.D. Clinic, Irwin Hospital, New Delhi.
23.	Himachal Pradesh	66,500	*1,32,000	50,757	..	*Budget for 1953.
24.	Kutch	75	Not available	..	Not available	
25.	Manipur	Not available	Not available	6,3000	..	
26.	Tripura	..	Not available	..	..	
27.	Vindhya Pradesh	..	11,000*		..	*Buildings for 4 leprosy clinics were under construction for which the sum of Rs. 23,457/- was spent during 1953.
28.	Andaman & Nicobar Islands . .	Not maintained	Not separately maintained.	..	..	

Table 25

Shows the total number of prisoners against authorised accommodation in Jails in all the States

States	Average daily population		Authorised Accommodation excluding Hospitals & observation cells		No. of persons per 100 units of authorised accommodation	
	1952	1953	1952	1953	1952	1953
Andhra . .	..	6,338	..	5,145	..	123
Assam . .	3,858	4,080	3,550	3,518	109	116
Bihar . .	18,620	17,292	16,678	16,678	111	104
Bombay . .	19,289	20,967	17,988	18,085	107	116
Madhya Pradesh .	6,179	5,916	9,509	9,509	65	62
Madras . .	25,424	26,574	22,807	25,192	111	105
Orissa	3,795	3,519	4,964	5,122	76	69
Punjab . .	8,560	9,326	6,557	..	130	142
Uttar Pradesh .	31,978	33,501	34,793	34,765	92	96
West Bengal . .	11,298	10,836	11,680	11,911	97	91
Hyderabad . .	5,315	4,219	5,253	5,159	101	82
Madhya Bharat	2,912	2,236	4,605	3,682	63	61
Mysore . .	1,758	4,598	2,013	4,904	87	94
P.E. P.S.U. . .	1,597	..	2,447	..	65	..
Rajasthan . .	3,879	4,287	5,912	5,912	66	73
Saurashtra .	926	..	1,052	..	88	..
Travancore-Cochin	..	..	..	..	..	..
Ajmer . .	207	187	544	544	38	34
Bhopal . .	367	..	670	..	55	..
Coorg . .	35	3,738	113	113	31	..
Himachal Pradesh	208	158	237	259	88	61
Kutch . .	148	148	290	290	51	51
Manipur .	254	250	260	294	98	85
Tripura . .	117	..	112	..	104	..
Vindhya Pradesh	..	769	..	925	..	83

Table 26

Death rate among Prisoners

States	Years	Death rate per 100 Hospital Admissions among Prisoners due to									
		Malaria	Dysentery	Diarrhoea	Pneumonia	T.B. of Lungs	Respiratory	Influenza	Enteric Fever	Small pox	Pyrexia of uncertain origin
	2	3	4	5	6	7	8	9	10	11	12
Assam	1952	0·7	1·7	2·5	16·7	..	6·7	..	..	..	8·3
	1953	0·79	1·7	5·49	24·44	32·14	4·27	..	..	..	3·22
Bihar	1952	0·2	0·6	0·2	7·3	21·9	0·9	..	2·5	4·8	..
	1953	0·20	0·66	0·87	3·95	17·48	0·71	..	1·45	6·25	..
Bombay	1952	..	0·3	0·8	7·1	8·6	0·5	..	10·3	..	..
	1953	0·11	0·35	0·25	5·06	11·72	1·09	..	8·96	..	..
Madhya Pradesh	1952	0·8	1·3	0·8	8·5	9·3	2·8	..	23·1	..	..
	1953	..	0·87	2·63	9·09	3·0	2·19	..	7·14	..	..
Madras	1952	0·9	0·5	1·2	3·5	13·8	3·8	0·2	12·5	..	..
	1953	0·79	..	1·19	10·23	16·46	1·98	..	..	..	..
Orissa	1952	0·3	0·9	1·4	..	16·7	..	..	..	..	..
	1953	0·22	0·34	..	..	..	..	..	·20	..	..
Punjab	1952	..	..	0·6	2·4	11·5	0·2	..	4·0	..	..
	1953	0·03	..	..	1·14	6·58	..	..	..	..	..
Uttar Pradesh	1952	0·2	0·2	1·1	9·2	10·2	0·8	..	..	..	..
	1953	0·16	0·57	1·70	8·19	6·88	0·55	..	..	..	..
West Bengal	1952	0·08	0·07	0·2	4·5	9·0	0·4	..	..	..	..
	1953	0·13	0·14	..	2·33	1·46	1·01	..	2·63	..	0·31

Table 26—*contd.*

Andhra	1952	..	..	..	..	..	..	..	..			
	1953	..	..	16·67	20·0	7·69	4·0	..	..	..	..	
Saurashtra	1952	Not available										
	1953	Not available										
Hyderabad	1952	0·02	..	..	7·1	13·3	0·02	..	..	..	..	
	1953	..	0·04	0·1	..	1·69	0·04	..	..	..	..	
Madhya Bharat	1952	Not available										
	1953	Not available										..
Rajasthan	1952	0·1	0·1	0·2	1·6	15·4	0·2	..	..	..	..	
	1953	0·13	0·9	..	7·89	36·0	0·26	..	..	..	..	5·56
P.E.P.S.U.	1952	Not available										
	1953	Not available										
Travancore-Cochin	1952	..	..	..	..	..	..	..	..	..	..	
	1953	..	..	..	..	..	·51	..	..	..	..	
Ajmer	1952	Not available										
	1953	Not available										
Vindhya Pradesh	1952	..	..	..		100·0	..	..	..	..	..	
	1953	0·05	..	0·31	..	..	..	..	..	..	..	
Tripura	1952	Not available										
	1953	Not available										
Manipur	1952	..	..	..	..	..	..	..	..	..	..	
	1953	..	..	..	..	100	..	..	..	..	..	
Kutch	1952	Not available										
	1953	Not available										
Mysore	1952	..	..	..	..	..	..	..	..	..	..	
	1953	0·01	..	0·47	..	13·33	0·71	..	..	..	..	
Himachal Pradesh	1952	Not available										
	1953	Not available										

Table 27

Health of Prisoners

States	Hospital admission rate per 1000 average daily strength		Death rate per 1000 daily average population		Constantly Sick rate per 1000 of daily average population	
	1952	1953	1952	1953	1952	1953
Assam	418	422	13·7	14.71	24·0	27·6
Bihar	759	920	5·5	6·76	31·0	32·04
Bombay	788	540	5·3	5·9	13·7	10·3
Madhya Pradesh	381	428	9·5	9·6	14·9	14·0
Madras	359	381	6·6	8·2	10·6	9·4
Orissa	2,469	988	8·8	5·2	44·2	43·8
Punjab	1,030	943	4·1	2·4	27·0	..
Uttar Pradesh	550	508	4·5	4·9	15·7	15·0
West Bengal	1,459	1,463	4·8	3·60	36·7	33·99
Andhra	..	82	..	3·6	..	14·0
Saurashtra	1,402	..	1·8	..	96·1	..
Hyderabad	4,055	6,050	2·1	2·6	52·0	78·0
Madhya Bharat	22	17	7·2	11·0	14·3	5·7
Rajasthan	2,341	..	5·6	..	64·1	..
P.E.P.S.U.	1,316	..	5·1	..	115·0	..
Mysore	25	34	3·4	3·7	20·8	17·4
Ajmer	174	..	4·8	..	9·9	..
Coorg	..	10,701	..	..	2·0	2·68
Tripura	1,965	..	17·0	..	21·8	..
Vindhya Pradesh	..	335	..	9·0	..	171·0
Manipur	18	5	12·6	·25	..	3·5
Kutch	13	20	13·2	..	47·0	2·7
Himachal Pradesh	,	817	..	1·0	..	443·0

Table 28

Health of Prisoners

States	Weight gained		Weight stationary		Weight lost	
	1952	1953	1952	1953	1952	1953
Assam	42	48	47	39	11	13
Bihar	55	55	40	40	5	5
Bombay	28	24	58	64	14	12
Madhya Pradesh	40	43	54	51	6	6
Madras	51	51	43	46	6	3
Orissa	55	55	34	38	11	7
Punjab	44	44	51	51	5	5
Uttar Pradesh	36	36	59	60	5	40
West Bengal	30	62	15	29	5	9
Andhra	..	69	..	29	..	2
Hyderabad	44	42	45	48	11	10
Madhya Bharat	51	53	43	40	6	7
Mysore	27	55	65	43	8	2
P.E.P.S.U.	70	..	25	..	5	..
Rajasthan	62	57	30	37	8	6
Saurashtra	43	..	41	..	16	..
Travancore-Cochin	44	..	45	..	11	..
Ajmer	40	..	50	..	10	..
Bhopal	34	..	66	..	1	..
Coorg	65	..	23	..	12	..
Himachal Pradesh	30	50	65	46	1	4
Manipur	49	32	41	47	10	21
Tripura	32	..	62	..	6	..
Vindhya Pradesh	..	..	..	..	..	..
Kutch	..	84	..	8	..	8

Table 29

ADULTERATION OF FOOD

Number of Samples examined in various States

State	Ghee and Butter			Milk and Milk Products			Edible Oils			Others		
	No. of samples	No. of samples adulterated	Percentage Adulterated	No. of samples	No. Adulterated	Percentage Adulterated	No. of samples	No. Adulterated	Percentage Adulterated	No. of samples	No. Adulterated	Percentage Adulterated
Punjab	1,269	185	14·58	9,177	2,419	26·36	505	95	18·8	1,402	376	26·8
West Bengal	2,097	356	16·98	25,803	7,067	27·39	+	+		13,370	3,621	26·08
Pepsu	131	50	38·16	1,612	215	13·34	17	4	23·5	+	+	+
Bhopal	98	46	46·94	190	79	41·58	1	1	625	76	26	34·2

+ Not available

Table 30

ADULTERATION OF FOOD

Number of prosecutions and fines realised

State	Number of prosecutions	Fine realised (in Rs.)
Punjab	3,715	Rs. 2,33,627
Pepsu	753	Rs. 26,965
Bhopal	72	+
Bihar	250	+

+ Not available.

Table No. 31

Table showing the number of hospitals, dispensaries, beds, etc. available for inpatients and number of beds reserved for Tuberculosis under Railways.

	North Eastern		Central		Northern		Eastern		Southern		Western	
	1952	1953	1952	1953	1952	1953	1952	1953	1952	1953	1952	1953
No. of Hospitals	11	11	11	12	..	12	13	17	..	12	9	9
No. of Beds	471	433	453	462	399	385	786	810	..	440	241	187
No. of Dispensaries	..	65	51	52	67*	59	106	109	..	63	51	54
No. of Beds	..	38	..	29	..	75	..	117	..	..	..	86
No. of Sanatoria or Clinics	..	.	..	..	..	..	..	7	..	1+	..	..
No. of Beds	..	..	..	..	6	..	34	..	..	25	17	..
No. of other Institutions	..	..	..	..	..	..	..	11@		17	..	..
No. of Beds	..	..	..	..	..	..	..	..	..	..	..	..
No. of T.B. Beds in other sanatoria	..	7	..	..	..	6	..	34	..	..	..	27

+Not known
*Includes Hospitals
@Dental Clinics.

Table No. 32

Medical and Health staff in Railways

Railway	Medical Superior Services		Assistant Surgeons		Compounders		Nursing Staff	
	Year 1952	Year 1953	Year 1952	Year 1953	Year 1952	Year 1953	Year 1952	Year 1953
Eastern	16	19	212	224	181	184	155	156
Southern	13	13	150	150	145	151	81	84
Western	13	14	116	116	136	127	41	40
Central	17	17	126	125	114	112	93	91
Northern	9	10	133	135	124	136	62	60
North-Eastern	10	12	136	136	129	131	102	69

NOTE : Superior Service includes Chief Medical Officer, Divisional Medical Officer, Assistant Medical Officers and Malaria Officers, Nursing Staff includes Nurses, Probationery nurses and midwives.

Table No. 33

Preventive Measures taken by the Railways

Railway	Cholera inoculations	Vaccinations	Anti Plague inoculations	Anti Typhoid inoculations
North Eastern Railway . .	27,583	60,189	+	24,277
Eastern Railway . . .	72,466	1,04,754	870	3,378
Northern Railway . .	20,165	44,534	130	1,566
Central Railway . . .	63,985	14,744	1,842	
Western Railway . .	+	+	+	+
Southern Railway . .	+	23,317	+	

+Not known.

Statement showing the number of general hospitals and dispensaries (allopathic) during the

State	Urban or Rural	Government		Government aided		Local bodies		Missionary	
		Hospitals	Dispensaries	Hospitals	Dispensaries	Hospitals	Dispensaries	Hospitals	Dispensaries
1	2	3	4	5	6	7	8	9	10
Andhra	Urban	49	21	11	1	16	40	..	..
	Rural	35	17	3	41	35	147	..	..
	TOTAL	84	38	14	42	51	187	..	..
Assam	Urban	41	9	1	1	9	..	..	..
	Rural	7	152	..	..	..	154	..	..
	TOTAL	48	161	1	1	9	154	..	..
Bihar	Urban	53	5	5	..	21	9	..	..
	Rural	36	31	2	2	35	383	..	..
	TOTAL	89	36	7	2	66	392	..	..
Bombay	Urban	55	826	8	6	11	101	..	.
	Rural	14	173	3	138	3	95	..	.
	TOTAL	69	199	11	144	14	196	..	..
Madhya Pradesh	Urban	52	4	28	3	71	11	..	..
	Rural	..	4	24	9	62	124	..	..
	TOTAL	52	8	52	12	133	135	..	..
Madras	Urban	69	11	3	1	23	48	..	..
	Rural	30	47	7	22	35	214	..	..
	TOTAL	99	58	10	23	58	262	..	..
Orissa*	Urban	38	3	1	1	3	5	..	..
	Rural	77	90	1	..	18	104	1	..
	TOTAL	115	93	2	1	21	109	1	..
Punjab	Urban	33	76	12	16	19	63	..	..
	Rural	3	130	1	84	7	160	..	..
	TOTAL	36	206	13	100	26	223	..	..
Uttar Pradesh†	Urban	177	46	16	24	39	51	8	1
	Rural	40	173	5	51	68	222	5	5
	TOTAL	217	219	21	75	107	[illegible]	13	6

number of hospital beds and number of patients treated in various states of India year 1953

Others		Total			No. of patients treated	
Hospitals	Dis-pensaries	Hospitals	Dis-pensaries	Number of beds	Indoor	Outdoor
11	12	13	14	15	16	17
19	9	95	71	5,947	2,66,063	80,74,591
16	16	89	221	2,785		
35	25	184	292	8,732		
2	..	53	10	2,311	43,702	22,37,904
1	129	8	435	365		
3	129	61	445	2,676		
20	..	99	14	5,300	1,51,787	39,94,036
21	39	104	455	1,529		
41	39	203	469	6,829		
31	27	105	160	8,329	4,65,323	33,28,638
13	55	33	461	2,643		
44	82	138	621	10,972		
24	22	175	40	5,038	1,40,685	48,57,637
17	36	103	173	610		
41	58	278	213	5,648		
17	12	112	72	9,456	4,00,081	10,22,525
19	43	91	326	2,830		
36	55	203	398	12,286		
1	6	43	15	2,023	65,622	44,76,887
4	16	101	210	1,234		
5	22	144	225	3,257		
7	12	71	167	7,148	1,91,486	61,82,781
..	3	11	377	1,962		
7	15	82	544	9,110		
30	60	270	182	**	3,63,208	1,38,61,759
28	44	146	495			
58	104	416	677	14,763		

Table 34.—(*continued*)

1	2	3	4	5	6	7	8	9	10
West Bengal .	Urban	83	21	13	11	24	56	..	..
	Rural	26	44	7	30	6	495	..	..
	TOTAL .	109	65	20	41	30	551	..	..
Hyderabad Deccan	Urban	..	12	31	..	..	..	..	..
	Rural	..	183	..	..	..	..	..	..
	TOTAL	..	195	31	..	..	..	..	..
ammu & Kashmir@	Urban	8	13	4	..	..	..	..	..
	Rural	..	72	..	..	.	..	.	..
	TOTAL	8	85	4	..	..	..	..	..
Madhya Bharat .	Urban	108	68	1	5	..	..	..	..
	Rural	15	457	2	4	..	..	..	..
	TOTAL	123	525	3	9	..	..	..	..
Mysore	Urban	44	13	8	3	6	32	..	..
	Rural	7	63	3	..	30	314	..	..
	TOTAL .	51	76	11	3	36	346	..	..
Pepsu .	Urban	..	37	44	..	..	..	..	..
	Rural	1	55	..	..	..	..	..	..
	TOTAL	1	92	44	..	..	..	..	..
Rajasthan .	Urban	170	76	..	..	..	..	1	..
	Rural	56	90	..	..	.	1	..	..
	TOTAL	226	166	..	..	..	1	1	..
Saurashtra .	Urban	25	32	..	..	3	2	..	..
	Rural	5	103	1	..	..	..	..	..
	TOTAL	28	135	1	..	3	2	..	..
Travancore-Cochin	Urban	49	3	3	..	1	..	..	..
	Rural	3	150	2	30	..	..	3	11
	TOTAL	52	153	5	30	1	..	3	11
Ajmer .	Urban	6	3	..	..	1	1	2	..
	Rural	..	8	..	..	..	..	1	..
	TOTAL	6	11	..	..	1	1	3	..
Bhopal .	Urban	..	4	3	..	..	..	..	..
	Rural	3	18	..	..	..	..	..	..
	TOTAL	3	22	3	..	..	..	..	..

Table 34—(*continued*)

11	12	13	14	15	16	17
14	6	134	94	10,435	3,52,274	63,21,362
6	62	45	631	2,952		
20	68	179	725	13,387		
..	..	31	12	4,700	1,27,828	55,77,566
..	..	..	183	966		
..	..	31	195	5,666		
..	..	12	13	472	11,339	14,03,438
..	..	..	72	198		
..	..	12	85	670		
..	..	109	73	3,368	58,685	49,54,909
..	..	17	461	276		
..	..	126	534	3,644		
2	..	60	48	5,754	1,72,654	80,70,510
..	3	40	378	1,176		
4	1	109	426	6,930		
..	..	44	37	1,451	27,534	34,54,573
..	..	1	55	26		
..	..	45	92	1,477		
29	58	200	134	5,019	1,50,094	1,05,15,566
4	13	60	104	311		
33	71	260	238	5,330		
5	..	33	34	1,682	58,000	26,40,000
..	..	4	103	248		
5	..	37	137	1,930		
..	..	53	3	5,121	1,80,609	43,86,851
6	58	14	249	2,470		
6	58	67	252	7,591		
..	..	9	4	373	7,037	3,09,206
..	..	1	8	242		
..	..	10	12	615		
..	..	3	4	458	39,418	7,87,466
..	..	3	18	129		
..	..	6	22	587		

Table 34—*contd.*

1	2	3	4	5	6	7	8	9	10
Coorg . .	Urban	2	1	..	..	..	..	..	..
	Rural	10	7	..	1	..	..	..	..
	TOTAL	12	8	..	1	..	..	..	..
Delhi .	Urban	10	15	5	..	3	16	..	..
	Rural	6	7	1	..	..	6	..	..
	TOTAL	16	22	6	..	3	22	..	..
Himachal Pradesh	Urban	11	4	..	..	..	..	..	..
	Rural	9	49	..	..	..	..	..	..
	TOTAL	20	53	..	..	..	..	..	..
Kutch . .	Urban	5	2	..	..	..	..	..	..
	Rural	2	13	..	..	..	..	..	..
	TOTAL	7	15	..	..	..	..	..	..
Manipur . .	Urban	5	1	..	..	..	..	..	..
	Rural	12	32	..	..	..	..	..	..
	TOTAL	17	33	..	..	..	..	..	..
Tripura .	Urban	2	10	..	..	..	..	..	..
	Rural	1	36	..	..	..	..	1	3
	TOTAL	3	46	..	..	..	..	1	3
Vindhya Pradesh	Urban	19	..	..	..	..	..	..	..
	Rural	22	34	..	..	..	..	..	..
	TOTAL	41	34	..	..	..	..	..	..
Andaman & Nicobar Islands	Urban	1	..	..	..	..	..	..	..
	Rural	3	12	..	..	..	..	..	..
	TOTAL	4	12	..	..	..	..	..	..

*Information for the year 1953 has not been received and hence figures for the year 1952 have been put in this chart. (In case of Uttar Pradesh information for column numbers 15 to 17 relates to the year 1953).

Table 34—*contd.*

11	12	13	14	15	16	17
..	..	2	1	386	19,112	4,52,518
2	..	12		117		
2	..	14	9		503	
..	..	18	31	2,037	62,704	48,74,629
..	..	7	13	118		
..	..	25	44	2,155		
..	..	11	4	511	76,338	11,05,441
..	..	9	49	260		
..	..	20	53	771		
1	..	6	2	114	3,171	1,13,128
4	23	6	36	10		
5	23	12	38	124		
..	..	5	1	200	4,113	3,53,173
4	..	16	32	183		
4	..	21	33	383		
..	..	2	10	101	34,335	5,89,217
..	..	2	39	18		
..	..	4	49	119		
1	..	20	692	692	7,17,580	6,11,045
..	2	22	2	242		
1	2	42		934		
..	..	1		218	8,509	61,991
..	..	3	12	140		
..	..	4	12	358		
		2,724	6,876	1,27,452	35,79,295	11,46,19,347

**Separate figures for urban and rural are not available.

@Information for the year 1950, 1951, 1952 and 1953 has not been received and hence figures for the year 1939 have been put in this chart.

Table 35

Statement showing the expenditure incurred on Medical Relief by various State Governments during the year 1953

State	Expenditure on Medical relief
	Medical Relief Rs.
Andhra	83,36,811*
Assam	53,66,980
Bihar	1,11,18,720
Bombay	2,22,17,415
Madhya Pradesh	83,59,000
Madras	2,24,05,445
Orissa	54,66,277@
Punjab	79,83,455
Uttar Pradesh	2,37,20,018
West Bengal	3,84,25,000
Hyderabad	79,63,210
Jammu and Kashmir	15,47,800@@
Madhya Bharat	74,11,252
Mysore	96,14,172
Pepsu	36,57,200
Rajasthan	1,04,33,660
Saurashtra	27,19,536*
Travancore-Cochin	89,56,695@
Ajmer	13,43,473@
Bhopal	13,79,265
Coorg	5,93,940
Delhi	40,38,182
Himachal Pradesh	15,37,900
Kutch	5,23,443
Manipur	5,40,517*
Tripura	5,62,560
Vindhya Pradesh	16,92,000
Andaman and Nicobar Islands	6,55,385*
Total	21,85,69,311

NOTE.—*Includes expenditure on Public Health also.

@Information for the year 1953 has not been received and hence figures for the year 1952 have been put in the chart.

@@Information for the years 1950, 1951, 1952 and 1953 has not been received and hence figures for the year 1949 have been put in the chart.

Table 36

Statement showing the amount of Government Grant-in-aid made to Hospitals and Dispensaries in the various States during the year 1953

State	Government Grant in-aid 1953
	Rs.
Andhra	1,25,527
Assam	9,69,441
Bihar	12,05,770
Bombay	13,04,144
Madhya Pradesh	10,29,309
Madras	1,71,898
Orissa	2,67,067*
Punjab	7,62,909
Uttar Pradesh	19,96,602
West Bengal	25,65,451
Hyderabad	Nil.
Jammu & Kashmir	26,248**
Madhya Bharat	6,000
Mysore	50,890
Pepsu	1,15,507
Rajasthan	6,000
Saurashtra	1,64,970
Travancore-Cochin	38,072*
Aimer	11,000*
Bhopal	Nil.
Coorg	6,000
Delhi	1,52,600
Himachal Pradesh	Nil.
Kutch	55,426
Manipur	Nil.
Tripura	500
Vindhya Pradesh	Nil.
Andaman & Nicobar Islands	Nil.
Total	1,10,32,322

NOTE.—*Information for the year 1953 has not been received and hence figures for the year 1952 have been put in the Chart.

**Information for the years 1950, 1951, 1952 and 1953 has not been received and hence figures for the year 1949 have been put in the chart.

Table 37

Hospitals &X-Ray

Name of State	Total No. of general hospitals & dispensaries	No. of hospitals having X-ray sets	No. of X-rays sets		No. of X-ray Examinations
			Major	Minor	
1	2	3	4	5	6
Andhra	476	15	18	12	52,556
Assam	506	15	9	15	20,120
Bihar	672	17	9	21	82,081
Bombay	759	79	54	51	3,56,872
Madhya Pradesh	491	32	22	22	89,714
Madras	398	26	13	52	2,14,325
Orissa	Not received	15	13	9	18,789
Punjab	626	13	9	11	24,939
Uttar Pradesh	Not received	53	31	60	1,09,040
West Bengal	904	28	21	44	1,24,764
Hyderabad	226	13	7	12	28,501
Jammu & Kashmir	Not received	3	2	2	13,387
Madhya Bharat	660	25	14	26	25,784
Mysore	526	23	14	28	1,48,583
Pepsu	137	6	7	4	24,170
Rajasthan	498	31	17	31	58,181
Saurashtra	174	14	6	17	26,276
Travancore-Cochin	319 (yr. 1952)	12	11	9	92,648
Ajmer	22 (yr. 1952)	3	7	4	11,416
Bhopal	28	1	2	1	8,152
Coorg	23	2	..	2	3,578
Delhi	Not received	5	8	15	80,207
Himachal Pradesh	73	4	3	2	8,516
Kutch	50	3	1	2	3,924
Manipur	54	1	1	..	763
Tripura	53	1	1	..	1,094
Vindhya Pradesh	78	4	2	3	2,170
Andaman & Nicobar Islands	16	1	..	1	306
TOTAL	7,767	445	302	456	16,30,854

Table 38

Giving State-wise the facilities of Radium therapy at Hospitals in 1953

State	Name and location of the hospital providing Radium treatment	Quantity of Radium available in 1953 (mgms)
1	2	3
Andhra	1 King George Hospital, Vishakhapatnam	383
Assam	1 American Baptish Mission Hospital, Gauhati	85
	2 Khasi Hills Welsh Mission Hospital, Shillong	550
	3 Assam Medical College Hospital, Dibrugarh	467·53
Bihar	1 Patna Medical College Hospital, Patna	824
Bombay	1 Tata Memorial Hospital, Bombay	200
	2 Seth Vadilal Sarabhai General Hospital, Ahmedabad	258
	3 Shri Sayaji General Hospital, Baroda	194·97
	4 Vail Institute Miraj Medical Centre, Miraj	100
	5 Municipal General Hospital, Sion	50
	6 Dr. K. M. Shah M. S. (Bombay)	62
	7 Dr. S. B. Ankle-Saria, M.D. (Bombay) Ahmedabad	50
Madhya Pradesh	1 Christian Hospital, Mungeli	215
Madras	1 Christian Medical College Hospital, Vellore	70
	2 Government Hospital, for women and children, Madras	617·98
	3 Barnard Institute of Radiology Government General Hospital, Madras	1,500
Punjab	1 V.J. Hospital, Amritsar	200
	2 Memorial Mission Hospital, Ludhiana	..
West Bengal	1 Medical College Hospital, Calcutta	338·5
	2 Presidency General Hospital, Calcutta	122·87
	3 R.G. Kar Medical College, Hospital, Calcutta	174
	4 Chittaranjan Cancer Hospital, Calcutta	1,208
Uttar Pradesh	1 Sarojni Hospital, Agra	400
	2 Eye Hospital, Sitapur	60
Madhya Bharat	1 M.T. Hospital, Indore	150
	2 J.A. Hospital, Gwalior	350
Orissa	1 Sriramchandra Bhanj Medical College Hospital Cuttack	514
Mysore	1 Vicotria Hospital, Bangalore	500
	2 Bowring & Lady Curzon Hospitals	124
	3 Krishnarajendra Hospital, Mysore	145
Rajasthan	1 Ganga X-ray & Radium Institute, Bikaner	140
Saurashtra	1 Irwin Hospital, Jamnagar	477
	2 Sir Takhtasinghji Hospital, Bhavanagar	97
Delhi	1 Lady Hardinge Medical College Hospital, New Delhi	247
Himachal Pradesh	1 Himachal Pradesh Hospital, Simla	227·73
Travancore-Cochin	1 General Hospital, Trivandrum	148
	2 General Hospital, Ernakulam	150
	3 South Travancore Medical Mission, L.M.S.	81
	4 Catherine Booth Hospital, Nagercoil	120
	mgm.	13291·58

N. B.—Other States had no facilities for radium treatment

Table

Statement showing the number of Blood Banks in the various States of India and the work done during the year 1953

States	No. of Blood Banks	No. of donors blood	Quantity of blood collected	Quantity of whole blood issued	No. of Blood transfusions	Volume of Serum Plasma		No. of officers trained	Remarks
						Manufactured	Supplied		
1	2	3	4	5	6	7	8	9	10
Andhra	4	1,235	4,45,459 cc.	4,46,050 cc.	1,317	8,900 cc. and 17 wet plasma bottles 2 dry plasma bottles.		51	
Assam	1	185	55,500 cc.	55,500 cc.	185	..	..	..	..
Bihar	6	3,668	7,47,035 cc	6,65,985 cc	2,710	48,550 cc.	56,050 cc.	6	
Bombay	11	10,402	37,43,840 cc.	27,24,690 cc	7,561	8,13,900 cc	3,07,750 cc.	1	
Madhya Pradesh	2	1,012	4,93,675 cc.	4,93,675 cc	1,144	..	..	1	
Madras	16	13,477	14,50,014 cc.	23,65.330 cc.	9,319	275,000 cc.	275,000 cc.	17	
Orissa	1	279	56,580 cc.	56,580 cc.	278	..	..	..	
Punjab	3	2,885	9,27,600 cc.	7,94,740 cc.	2,596	36,050 cc.	36,050 cc.	2	
Uttar Pradesh (one Blood Bank & 8 units)	9	1,511	4,80,400 cc.	4,66,525 cc.	1,464	..	..	6	
West Bengal	1	7,120	19,71,824 cc.	19,29,598 cc.	8,002	11,000 cc.	11,000 cc.	2	
Hyderabad	1	1,098	3,29,400 cc.	3,29,400 cc.	1,164	..	..	..	
Jammu & Kashmir	2	24	11,000 cc.	11,000 cc.		..	..	2	
Madhya Bharat	..	158	38,175 cc.	38,175 cc.	158	..	..	..	
Mysore	2	528	1,78,475 cc.	1,78,475 cc.	528	..	..	..	
P.E.P.S.U.	..	212	52,14 cc.	51,840 cc.	205	400 cc.	400 cc.	..	
Rajasthan	2	545	2,21,560 cc.	1,70,180 cc.	603	..	..	4	
Saurashtra	..	70	20,790 cc.	14,300 cc.	79	..	..	..	
Travancore-Cochin	1	200	1,08,000 cc.	1,08,000 cc.	180	..	..	..	
Ajmer	1	..	16,225 cc.	16,225 cc.	53	..	..	..	
Delhi	1	2,414	604 cc.	559 cc.	2,234	10	10	5	
Bhopal	..	..	250 cc.	250 cc.	19	..	..	..	
Himachal Pradesh	..	..	1,000 cc.	1,000 cc.	4	..	..	..	
Andaman and Nicobar Islands	..	8	1,000 cc	1,000 cc.	7	..	..	..	

Other States had no Blood Transfusion Services.

Table 40

Statement showing the Mental Hospitals in the States, their capacity, number of patients admitted and the expenditure incurred during 1953

States	Name and location of Mental Hospital	Sanctioned accommodation	No. of patients carried over from 1952-53	No. of patients admitted during 1953	No. of patients at the end of 1953	Expenditure 1953 Rs.
1	2	3	4	5	6	7
Andhra . .	1. Govt. Mental Hospital, Waltair.	210	208	220	217	1,26,999
Assam . .	1. Assam Mental Hospital, Tezpur.	716	710	172	697	4,52,959
Bihar . .	1. Ranchi Indian Mental Hospital, Kanke.	1380	1222	115	1586	12,63,448
	2. Hospital for Mental Diseases, Ranchi.	400	309	278	387	10,93,197
Bombay .	1. N. M. Mental Hospital, Thana.	390	1092	1047	1101	8,89,916
	2. Mental Hospital, Ratnagiri.	176	278	109	272	1,52,700
	3. Central Mental Hospital, Yeravda.	1247	1734	1011	1809	16,65,636
	4. Mental Hospital, Ahmedabad.	267	448	107	328	1,99,698
	5. Mental Hospital, Dharwar.	199	308	431	440	3,06,963
	6. Mental Hospital, Baroda.	75	80	51	86	86,524
Madhya Pradesh	1. Mental Hospital, Nagpur.	626	549	218	531	3,95,001
Madras .	1. Government Hospital Madras.	888	1870	904	1855	11,83,764
	2. Government Mental Hospital, Kozhikode.	364	626	268	658	3,60,444
Punjab . .	1. Punjab Mental Hospital, Amritsar.	500	521	326	538	8,58,561
Uttar Pradesh .	1. Mental Hospital, Agra.	622	576	456	605	6,89,179
	2. Mental Hospital, Bareilly.	402	321	200	349	2,66,599
	3. Mental Hospital, Banaras.	331	244	3	249	1,64,157
West Bengal .	1. Lambini Park Mental Hospital, Tiljala, (24 Parganas).	82	63	171	69	1,66,107
	2. Mental Hospital, Hooghly.	60	51	55	42	33,584
	3. Mental Observation Ward, Bhowanipur, Calcutta.	30	18	108	23	70,920
	4. Bangya-Unmad Asram, Vivekanand Road, Dum Dum.	80	43	126	55	53,150
	5. Bodhi Peet Home for mentally deficient.	75	20	4	17	18,433

Table 40—contd.

1	2	3	4	5	6	7
Hyderabad .	1. Hospital for Mental Diseases, Hyderabad.	600	574	531	678	2,96,132
Jammu & Kashmir.	1. Mental Hospital, Srinagar.	..	52	30	16	14,674
Madhya Bharat	1. Mental Hospital, Indore.	50	59	46	61	23,958
	2. Mental Hospital, Gwalior.	120	122	232	130	66,628
Mysore .	1. Mental Hospital, Bangalore.	300	331	965	362	3,98,848
Rajasthan .	1. Mental Hospital, Jodhpur.	60	58	60	52	15,564
	2. Mental Hospital, Jaipur.	100	87	71	91	36,617
	3. Mental Hospital, Udaipur.	24	22	27	17	13,520
Saurashtra .	1. Mental Hospital, Bhavnagar.	18	15	5	16	11,852
Travancore-Cochin.	1. Hospital for Mental Diseases, Oolampara, Trivandrum.	201	229	560	248	1,32,338
	2. Mental Hospital, Trichur.	141	212	185	234	1,10,414
	Total .	10,734	13,112	9,169	3,419	1,16,18,484

NOTE :

1. Others States do not have mental hospitals.
2. Information in case of Travancore-Cochin has not been received for the year 1953 ; hence figures for the year 1952 have been shown in this chart instead.

Table 41

Statewise distribution of 3,081 Maternity and Child Welfare Centres.

1. Andhra	60
2. Assam	33
3. Bihar	51
4. Bombay	301
5. Madhya Pradesh	142
6. Madras	889
7. Orissa	28
8. Punjab	109
9. Uttar Pradesh	452
10. West Bengal	331
11. Hyderabad	72
12. Jammu & Kashmir	2
13. Madhya Bharat	60
14. Mysore	166
15. P.E.P.S.U.	16
16. Rajasthan	34
17. Saurashtra	41
18. Travancore-Cochin	150
19. Ajmer	9
20. Coorg	27
21. Delhi	54
22. Himachal Pradesh	23
23. Kutch	4
24. Manipur	11
25. Tripura	11
26. Vindhya Pradesh	3
27. Pondicherry	2
TOTAL	3,081

Table 42

Statewise distribution of the number of Maternity beds per 100 births in urban and rural areas for 1953.

S.No.	State	Urban	Rural
1.	Assam	+	0·2,088
2.	Andhra	+	+
3.	Bihar	+	0·0,653
4.	Bombay	1·2,239	0·5,539
5.	Madhya Pradesh	1·2,328	0·1,789
6.	Madras	1·4,090	0·3,795
7.	Orissa	1·8,860	0·0,650
8.	Punjab	0·9,898	0·1,558
9.	Uttar Pradesh @	0·0,400	0·0,095
10	West Bengal	3·0,464	0·6,006
11.	Hyderabad	+	+
12.	Jammu & Kas' mir	+	+
13.	Madhya Bharat	1·2,434	0·6,017
14.	Mysore	1·7,829	0·7,288
15.	PEPSU	+	+
16.	Rajasthan	1·4,590	+
17.	Saurashtra	2·6,295	0·7,627
18.	Travancore-Cochin.	+	+
19.	Aimer	+	+
20.	Bhopal	2·1,538	0·3,998
21.	Coorg	+	1·2,834
22.	Delhi	1·0,397	0·5,871
23.	Himachal Pradesh	3·2,823	0·1,423
24.	Kutch	+	+
25.	Tripura	1·8,519	1·0,469
26.	Manipur	6·5,147	2·3,364
27.	Vindhya Pradesh	+	+
28.	Andamans & Nicobar Islands	+	+

@The percentage is based on the number of beds in purely Maternity Homes of the Urban areas only.

+Not available.

Table 45

(*a*) Number of nurses, midwives, etc., registered with the States Nurses Registration Councils during 1953.

Serial No.	Name of registered council	Nurses	Midwives	Health visitors	Nurse dais	Dais
1	Assam . . .	232	172	..	..	..
2	Bihar . . .	651	377	5	..	164
3	Bombay . . .	4,619	4,764	179	..	..
4	Madhya Pradesh .	1,040	859	144	..	277
5	Madras . . .	6,519	10,266	..	..	9
6	Orissa . . .	178	131	6	..	232
7	Punjab . . .	1,326	904	127	557	3,018
8	Uttar Pradesh . .	1,299	1,827	87	..	..
9	West Bengal . .	3,216	2,900	136	306	..
	TOTAL .	19,080	22,200	684	863	3,700

(*b*) Number of nurses, etc. estimated to be in actual practice during the year 1953.

Nurses	13,500
Midwives	15,500
Health Visitors	1,000

Table No. 46

Statement showing information regarding training of nurses in the States during 1953

States	Total number of seats available for the training in										
	General Nursing		Jr. Grade Nursing		Nursing of women and children	Midwives	Assistant midwives	Health Visitors	Male Nursing	Nurse Dais	Dais
	Male	Female	Male	Female							
1	2	3	4	5	6	7	8	9	10	11	12
Andhra	46	127	..	..	..	127	..	..	12	..	..
Assam	8	120	..	32	18	50	..	..	2	..	24
Bihar	..	93	5	175	..	29	..	..	2	..	84
Bombay	14	42	..	..	..	534	..	40	..	..	..
Madhya Pradesh	..	287	..	..	27	135	..	9	..	300	6
Madras	149		..	552	..	583	..	50	..	..	..
Orissa	..	1	..	..	..	28	..	..	..	..	13
Punjab	20	135	..	32	39	77	..	25	54	59	963
Uttar Pradesh	190		..	..	..	110	..	20	..	..	1210
West Bengal	3	367	3	433	110	234	200	16	..	..	11

Hyderabad . .	10	23	..	..	..	29	..	20	..	..		
Jammu & Kashmir .	..	..	..	..	..	..	..	..	..	..		
Madhya Bharat .	..	76	..	36	..	40	..	..	..	..	..	
Mysore	..	90	..	17	..	74	..	..	8	..	..	
P.E.P.S.U. . .	..	18	..	..	18	..	..	..	..	12	16	
Rajasthan . .	..	26	..	..	..	18	4	..	..	28	..	
Saurashtra . .	..	71	..	9	..	35	..	..	14	10	20	
Travancore-Cochin .	..	80	..	..	..	..	..	..	..	..	..	
Ajmer	..	..	..	..	..	..	..	..	..	..	..	
Bhopal	..	12	..	..	..	10	..	..	..	..	40	
Bilaspur	..	..	..	..	..	..	..	..	..	..	..	
Coorg	..	..	..	..	..	12	..	..	..	..	..	
Delhi	..	35	..	68	..	44	..	24	..	..	8	
Himachal Pradesh .	..	15	..	..	..	..	..	..	..	..	8	
Kutch	..	..	..	..	..	..	..	..	..	..	..	
Manipur . . .	..	..	..	..	..	40	..	..	..	..	..	
Tripura . . .	..	..	..	..	..	..	..	..	..	..	..	
Vindhya Pradesh .	..	..	..	..	..	..	..	..	..	..	..	
Andaman & Nicobar Islands . .	..	..	..	..	..	..	..	..	..	..	..	
	87	3357	8	1354	212	2159	204	204	92	409	239	

Table No. 46—*contd.*

Statement showing information regarding training of nurses in the States during 1953

	Number of candidates admitted for training in										
	General Nursing		Jr. Grade Nursing		Nursing of women and children	Midwives	Assistant midwives	Health Visitors	Male Nursing	Nurse Dais	Dais
	Male	Female	Male	Female							
1	13	14	15	16	17	18	19	20	21	22	23
Andhra	37	52	..	..	..	111	..	..	12	..	..
Assam	3	61	2	39	4	43	..	..	2	..	24
Bihar	..	38	..	52	..	29	..	..	1	..	50
Bombay	32	354	..	..	..	395	..	21	..	..	..
Madhya Pradesh	..	107	..	..	6	60	62	3	..	..	6
Madras	140	465				535		16	..	..	..
Orissa	..	32	..	..	..	32	..	..	..	..	9
Punjab	5	96	..	22	6	72	..	23	31	54	1114
Uttar Pradesh	29	83	..	..	..	82	..	12	..	..	..
West Bengal	..	132	..	140	30	145	120	8	..	..	..

Hyderabad . .	10	23	..	..	..	18	..	13	..	..		
Jammu & Kashmir .	..	..	..	..	..	..	..	..	..	..	..	
Madhya Bharat .	..	68	..	5	..	38	..	..	..	..	..	
Mysore . . .	..	100	..	..	..	74	..	..	8	..	..	
P.E.P.S.U. . .	..	5	..	..	..	..	..	..	..	5	16	
Rajasthan . .	..	17	..	3	..	12	3	..	4	13	..	
Saurashtra . .	..	28	..	..	..	20	..	..	3	4	12	
Travancore-Cochin .	..	80	..	..	..	..	..	..	..	..	..	
Ajmer . . .	..	..	..	..	..	..	..	..	..	..	..	
Bhopal . . .	..	6	..	..	..	10	..	..	..	..	40	
Bilaspur . .	..	..	..	..	..	..	..	..	..	..	..	
Coorg . . .	..	..	..	..	..	7	..	..	..	..	..	
Delhi . . .	..	28	..	48	..	44	..	25	..	..	45	
Himachal Pradesh .	..	15	..	..	..	..	..	..	..	..	7	
Kutch . . .	..	..	..	..	..	..	..	..	..	..	..	
Manipur . .	..	..	..	..	..	30	..	..	..	..	..	
Tripura . .	..	..	..	..	..	..	..	..	..	..	..	
Vindhya Pradesh .	..	..	..	..	..	..	..	..	..	..	..	
Andaman & Nicobar Islands . .	..	..	..	..	..	..	..	..	..	..	..	
	256	1790	2	309	46	1757	185	121	61	76	1328	

Table No. 46—*contd.*

Statement showing information regarding training of nurses in the States during 1953.

States	Number who qualified after completion of training in										
	General Nursing		Jr. Grade Nursing		Nursing of women and children	Midwives	Assistant midwives	Health Visitors	Male Nurses	Nurse Dais	Dais
	Male	Female	Male	Female							
1	24	25	26	27	28	29	30	31	32	33	34
Andhra	20	45	..	..	..	78	..	..	2	..	..
Assam	..	39	..	16	4	25	..	..	..	..	22
Bihar	..	21	..	45	..	13	..	2	1	..	41
Bombay	24	296	..	..	..	307	35	16	..	..	..
Madhya Pradesh	..	62	..	..	9	45	..	3	..	40	6
Madras	106		334		..	367	..	7	..	..	..
Orissa	..	33	..	..	..	31	..	..	..	..	11
Punjab	..	28	..	17	7	49	..	6	15	60	310
Uttar Pradesh	25	118	..	..	..	32	..	5	..	..	300

1	2	3	4	5	6	7	8
Punjab	20	31	10	21	2,858	18,033	**The States of Kutch, Manipur, Tripura, Vindhya Pradesh, Andaman & Nicobar Islands have not yet reported.
Uttar Pradesh	537	277	62	252	3,336	28,391	
West Bengal	———		Not known	———	333	6,393	
Hyderabad	222	..	..	56	24	219	
Jammu & Kashmir			NIL				
Madhya Bharat	266	..	8	5	..	..	
Mysore	38.	..	2	..	..	..	
Rajasthan	443	..	..	29	..	..	
Saurashtra	..	..	..	..	197	2,334	
Travancore-Cochin	117		Not available	315	41	5,052	
Bhopal	..	..	..	..	..	..	
Coorg	3	..	..	..	..	..	
Delhi	..	..	15	..	1,166*	1,166	*Registration started in March, 1953.
Himachal Pradesh	60	..	..	..	..	..	

Table No. 58

Details of practitioners of Ayurvedic and Unani Systems of Medicine for the year 1958.

Name of States	No. of Ayurvedic & Unani practitioners employed on 31-12-58 under			No. of Subsidised Ayurvedic & Unani Practitioners on 31-12-53	No. of Ayurvedic & Uanani Practitioner registered during 1953	Total No. of Practitioners borne on registered on 31-12-53	Remarks
	Government	District Board	Municipal Board				
1	2	3	4	5	6	7	8
Andhra	2	225	39	185	322*	14.090*	*These figures are the No. of practitioners of Indigenous Medicine registered under the Central Board of Indigenous Medicines.
Assam	5*	..	..	6	13	104	*In Ayurvedic College, Gauhati.
Bihar	10	305	7	215	126	126	
Madhya Pradesh	..	208	29	..	546	4,223	
Bombay	374	169	26	86	350	10,425	
Madras	71	..	382	216	Shown in Andhra State figures.		
Orissa	59	28	1	8	..	..	

Table 57

Statement II Particulars of Aircraft which arrived from and left for Foreign Countries from Major Airports in India during the year 1953.

Particulars of Aircrafts	Airport Health Organisation				
	Calcutta Airport	Bombay Airport	Tiruchirappalli Airport	Madras Airport	Delhi-Airport (Palam)
Inward Traffic.					
Aircraft medically inspected .	2,951	1,314	745	378	877
Passengers medically inspected .	68,030	26,841	10,143	3,892	16,013
Crew medically inspected .	22,498	9,883	3,013	1,541	5,479
Infected aircraft . . .	..	..	..	..	..
Deaths due to infectious diseases	..	..	..	..	..
Outward Traffic.					
Aircraft medically inspected	3,007	1,081	746	380	639
Passengers medically inspected	61,892	25,595	11,197	4,694	16,674
Crew medically inspected .	20,780	8,531	3,024	1,540	5,262
Infected aircraft . . .	..	..	..	..	..
Deaths due to infectious diseases	..	..	..	..	..
Suspected cases of yellow fever quarantined .	..	..	..	..	..

Table 56

Statement I Statistics of Important work done by Port Health Organisations at Major Ports in India during the year 1953.

Particulars	Port Health Organisations				
	Calcutta	Bombay	Madras	Cochin	Visakha-patnam
(A) *Incoming vessels:*					
(*i*) Vessels arriving at the port	1,453	3,086	586	991	549
(*ii*) Country craft arriving at the port	..	19,661	..	364	..
Passenger vessels medically inspected :					
(*i*) Arriving from foreign ports	11	51	52	14	..
(*ii*) Arriving from coastal ports	..	..	.	..	..
Cargo vessels medically inspected:					
(*i*) From foreign ports	137	122	532	272	46
(*ii*) From coastal ports	..	..	2	2	12
Country crafts medically inspected:					
(*i*) From foreign ports	..	..	..	..	..
(*ii*) From coastal ports	..	..	..	302	..
Passengers medically inspected :	1,396	39,018	20,701	1,502	57
Crew medically inspected	9,400	19,433	37,084	19,349	3,697
Infected ships	4	41	..	..	1
Deaths due to infectious diseases	..	..	..	..	..
(B) Outgoing vessels:					
(*i*) Vessels leaving the port	1,493	2,198	586	11,001	549
(*ii*) Country craft leaving the port	..	14,727	..	369	1
Passenger vessels medically inspected:					
(*i*) For foreign ports	51	205	54	10	..
(*ii*) For coastal ports	..	..	..	..	..
Cargo vessels medically inspected :					
(*i*) For foreign ports	1,045	792	336	360	314
(*ii*) For coastal ports	..	..	..	..	..
Country craft medically inspected:					
(*i*) For foreign ports	..	31	..	19	..
(*ii*) For coastal ports	..	.	..	..	.
Passengers medically inspected	23,543	86,642	43,787	1,203	251
Crew Medically inspected	65,637	61,566	28,784	21,006	17,861
(C) Ships issued with Deratisation certificates	53	37	..	..	..
(D) Ships issued with Deratisation Exemption certificates:	118	169	5	..	..
(E) Seaman's Clinics.					
Attendance in outpatient department :					
(*i*) New cases	2,420	2,035	..	..	..
(*ii*) Old cases	17,161	10,700	..	..	..
Attendance in in-patient department	..	261	..	..	..
(F) Medical Examination (Previously the Pre entry M.E. of Seamen by Government doctors:					
(*i*) Seamen examination (including re-examination)	15,638	15,772	260	59	188
(*ii*) Tempoary unfit	3,899	5,034	25	4	29
(*iii*) Permanently unfit	449	337	1	2	11
(*iv*) Fit	11,290	10,482	234	52	148

Table 55

Summary of the work done by Chemical Analysers Examiners and the Serologist, Government of India, during the year 1953.

Designation of Officers	Medico-Legal Investigations.										General analysis and other work	
	Poisons-Human		Poisons-Animal		Stains		Miscellaneous		Total			
	Cases	Articles	Cases	Articles	Cases	Articles	Cases	Articles	Cases	Articles	Cases	Articles
Part A												
Director of Central Chemical Examiner [illegible]	..	..	..	..	..	..	..	..	..	..	..	..
Chemical Examiner, [illegible]	824	3624	21	116	327	3221	35	73	2217	7034	4838	7281
Chemical Examiner, [illegible]	1506	5433	59	242	383	7206	529	1673	3867	1255	..	20241
Chemical Examiner, [illegible]	525	461	23	43	414	6633	7	50	1972	8387	1914	2749
Chemical Examiner, Madras	1207	5861	113	1139	1345	7424	265	1509	3023	15173	78	78
Part B												
Chemical Examiner, Jammu Kashmir, Jammu	73	207	1	1		67	..	..	95	275	2019	2827
Chemical Examiner, Madhya Bharat, [illegible]	142	595	..	..		1131	141	152	483	1878	1949	..
Chemical Analyser, [illegible]	390	553	8	16	255	924	140	617	793	1910	..	155
Chemical Examiner, Rajasthan Jaipur	228	464	2	3	135	627	75	154	440	1248	..	..
Chemical Analyser, Junagadh	..	..	..	..	103	304	2	3	105	307	..	..
Serologist, Government of India, Calcutta					*6150	*26462					**11259 ***1216	***6298

*Includes 91 cases and 120 articles from the Union of Burma.
**Wassermann Reations (includes 377 VDRL & 210 Kahn Tests).
***Detection of blood & semen group from stains etc. for medico-legal purposes.

from the Dental Colleges, Expenditure incurred etc. in 1953.

Annual Admissions.	No. of students admitted		No. of students qualified		Total Expenditure in Rupees	Names of attached hospitals used for training purposes
	Men	Women	Men	Women		
6	7	8	9	10	11	12
60	31	2	17		2,26,618	B.Y.L. Nair Charitable Hospital, Bombay.
30	27	3	14	..	1,12,770	J.J. Group of Hospitals, Bombay.
15	13	2	..	..	1,17,400	Government General Hospital, Madras.
14	11	3	..	..	75,187	Punjab Government Dental Hospital Amritsar, for all Dental Subjects. V.J. Hosp. Amritsar for the required General Medical subjects.
20	20	..	5	..	61,093	Gandhi Memorial and associated hospital for training in Medicine and General Surgery.
25	21	2	41	..	1,63,769	Calcutta Dental Hospital.
164	123	12	77	3	7,56,837	

*The Diploma Examination is conducted jointly by a board of examiners partly nominated by the Government of Bombay and partly appointed by the Dental Board of the College.

Table

Showing the number of Students Admitted to and passed out

Name of the College	Controlling Authority	University or Examining body to which affiliated	Degrees and Diplomas granted	Duration of the course
1	2	3	4	5
Nair Hospital Dental College, Bombay.	Bombay Municipal Corporation.		L.D.Sc.	4 Yrs.
Sir C.E.M. Dental College, Bombay.	Government	Bombay University	B.D.S. L.D.S.	4 Yrs. 4 Yrs.
Dental Wing, Madras, Medical College, Madras.	Government	Madras University	B.D.S.	4 Yrs.
Punjab Government Dental College and Hospital, Amritsar.	Government	Punjab University	B.D.S.	4 Yrs.
Dental College and Hospital, King Georges Medical College, Lucknow.	Finances are provided by the U.P. Govt. and the administration is controlled by the Lucknow University.	Lucknow University	B.D.S.	4 Yrs. for under Graduates, 2 Yrs. for Medical graduates.
Calcutta Dental College and Hospital, Calcutta.	Government	Calcutta University and State Medical Faculty of West Bengal.	B.D.S. L.D.S.	4 Yrs. 4 Yrs.

Table 53

The number of dental practitioners registered with the various State Dental Councils Dentists Registeration Tribunals up to the end of 1953.

Serial No.	States	No. of dental practitioners		Total
		Men	Women	
1	2	3	4	5
1	Assam	59	2	61
2	Bihar	93	..	93
3	Bombay	1,008	48	1,056
4	Madhya Pradesh	112	1	113
5	Madras	346	10	356
6	Orissa	12	..	12
7	Punjab	486	3	489
8	Uttar Pradesh	415	8	423
9	West Bengal	523	8	531
10	Saurashtra	88	..	88
11	Travancore-Cochin	176	3	179
12	Bhopal	4	..	4
13	Delhi	286	10	296
	TOTAL	3608	93	3,701

Table 52

Showing the number of doctors registered with various State Medical Council up to the end of 1953.

Serial No.	Name of States	Graduates		Licentiates		Total	With foreign qualifications		Remarks
		Men	Women	Men	Women		Men	Women	
1	2	3	4	5	6	7	8	9	10
1	Assam	258	3	1859	17	2137	72	3	
2	Bihar	1759	103	2837	124	4823	90	23	
3	Bombay	6287	1018	5775	562	13642	585	70	
4	Madhya Pradesh	495	83	1222	114	1914	51	14	
5	Madras	4469	896	4004	603	9971	334	145	
6	Orissa	353	41	702	37	1133	22	3	
7	Punjab	1164	244	1969	216	3593	38	13	
8	Uttar Pradesh	2678	212	2776	212	5878	Separate figures not maintained.		
9	West Bengal	5730	132	13674	294	19830	220	18	
10	Hyderabad	666	90	404	53	1213	74	10	
11	Mysore	460	72	994	155	1681	52	20	
12	Travancore-Cochin	13	7	8	2	30	..	..	
13	Bhopal	18	4	33	4	59	4	2	
	TOTAL	24349	2905	36257	2393	65904	1542	321	

N.B.—The States which have no Medical Councils of their own have been omitted.

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Schools, Total Expenditure incurred etc., for the year 1953.

No. of students passed out		Total No. of students on roll		Total Expenditure in Rs.	Cost of teaching per student per year	Capitation charges per annum	Remarks
Men	Women	Men	Women				
6	7	8	9	10	11	12	13
22	1	244	18	158130	603	Nil	
32	1	166	10	155080	858	Nil	
3	..	..	..	40415	does not arise		
58	3	95	3	27726	283	Nil	
43	3			110699	1456	there is no such student	
59	22	446	94	113093	209	Rs. 240 for the whole course.	

Table

The number of students admitted to and passed out foom various Medical

Name and Location of the Medical Schools	Total No. of Seats available	Seats reserved for ladies	No. of students admitted	
			Men	Women
1	2	3	4	5
Robertson Medical School, Nagpur.	109	No reservation	101	8
Arya Medical School, Ludhiana .	35	Do.	35	..
Jackson Medical School, Jalpaiguri.	Fresh admission stopped	Fresh admission stopped		
Ronaldshay Medical School, Burdwan.	Do.	Fresh admission closed	Only the students on transfer from different Medical Schools have been admitted.	
Nilratan Sircar Medical School Calcutta.	Do.	Do.	Fresh admission closed.	
Medical School, Bangalore . .	100	No reservation	102	18

8	9	10	11	12	13
264	40	3,82,378	1,224	1,500	Condensed M.B.B.S., Course.
					Condensed M.B.B.S., Course.
258	39	6,47,867	1,510	1,500@@	From Non Madhya Bharat Government Students.
				300	From those who are admitted against reserved seats.
430	86	2,66,900	517	..	Including 10 TDD course students.
					15 % of the seats are usually allotted to lady students.
40	10	4,69,378	9,388	Nil.	
362	68	4,53,232	1,054	Nil.	

1	2	3	4	5	6	7
G. R. Medical College, Gwalior .	50 + 12*	5	54	8	48	9
Mahatma Gandhi Memorial Medical College, Indore.	50 + 10 to 15	No reservation	39	9	57	6
Medical College, Mysore .	85	Do.	74	11	38	9
Government Medical College, Patiala.	50	10	40	10	..	..
Swami Man Singh Medical College, Jaipur.	80	20%(16)	64	16	40	3

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Medical Colleges, total expenditure incurred, etc. during the year 1953.

Total No. of students on roll		Total Expenditure in Rupees	Cost of teaching per student per year in Rs.	Capitation charges per annum in Rs.	Remarks
Men	Women				
8	9	10	11	12	13
384	100	5,84,152	1,197	Nil.	
		1,62,750		Nil.	*As the clinical courses of students were newly started, the final examinations were held only at Andhra Medical College, Visakhapatnam for the whole course.
397	34	6,24,244	1,448	7,500	*Condensed Course.
514	82	7,32,245	1,230	Nil.	
430	19	5,07,605	1,126		This has not been levied so far. The matter is under consideration by Government of Bihar.
317	99	6,84,747	..		
322	44	13,04,477	3,564		Capitation fees are charged from a student not of the State. *Condensed Course students.
639	128	11,28,762	1,472	750	
373	116	5,67,454	..	..	
319	65	3,95,833	1,031	Nil.	
187	24	2,98,650	5,455	..	
394	65	25,02,316	5,452	Nil.	
103	120	4,54,867	1,901	..	**The student from Burma is charged a capitation fee of Rs. 1,200 per year.
1,000	352	18,63,765	1,378	Nil.	
480	131	5,73,142	671	Nil.	** 20% of the number of seats available after deductions, total No. of seats (10) reserved for candidates outside Madras State, is reserved for women candidates.
95	5	2,18,196	1,416		
217	33	5,05,246	2,021	Nil.	
522	99	8,08,837	1,302	Nil.	
52	145	6,29,925	3,200	..	
230	75	6,48,325	2,085	Nil.	
954	149	11,95,363	1,006	Nil.	
1,201	129	15,30,418	1,150	2,805	*Condensed Course students.
550	49	6,16,633	689	..	
662	79	8,44,144	1,139	2,805	
845+367*	4+35*	2,81,534	332	2,000	at the time of admission (once for all)
366	131	4,89,874	982	Nil.	*Condensed Course students.

Table

The number of students admitted to and passed out from various

Name and location of the college	Total No. of seats available	Seats reserved for ladies	No. of students admitted		No. of students qualified	
			Men	Women	Men	Women
1	2	3	4	5	6	7
Andhra Medical College, Visakhapatnam.	60	20% (12)	46	14	63	22
Guntur Medical College, Guntur	50	20% (10)	43		*	*
Assam Medical College, Dibrugarh.	68 + 16*	No reservation	76		40	2
Prince of Wales Medical College, Patna.	100	12	85		109	5
Darbhanga Medical College, Darbhanga.	60	6	54		89	3
B.J. Medical College, Poona.	80	No reservation.	63	17	42	17
B.J. Medical College, Ahmedabad	60 + 15*	Do.	47 + 12*	13 + 2*	44	7
Grant Medical College, Bombay.	120	Do.	100	20	71	30
Seth G. S. Medical College, Bombay	82	Do.	57	25	48	19
Topiwala National Medical College Bombay.	60	Do.	47	13	39	6
Medical College, Baroda	60	Do.	53	7	.	..
Medical College, Nagpur.	83	Do.	71	12	87	17
Christian Medical College, Vellore.	56	20% (76)**	25	27	15	25
Medical College, Madra .	135		99	36	134	36
Stanley Medical College, Madras.	110		89	21	75	20
Kasturba Med. College, Manipal	100		95	5	..	..
Sriram Chandra Bhanj Medical College, Orissa.	50	10	39	11	35	8
Medical College, Amritsar.	80	13	66	16	74	16
Christian Medical College, Ludhiana.	50	25	25	25	..	30
Sarojini Naidu Medical College, Agra.	75	15	61	17	59	16
Mahatma Gandhi Memorial Medical College, Lucknow.	150	25	171	33	123	23
Medical College, Calcutta .	136 + 100*	No reservation	112 + 92*	18 + 8*	194	26
Calcutta National Medical Institute (College), Calcutta.	100 to 125		125	20	47	1
Nilratn Sircar Med. College, Calcutta.	150		141	13	33	2
R.G. Kar Med. College, Calcutta .	125		120	5	130 + 137*	11
Osmania Med. College, Hyderabad.	80		67	26	50	9

Table 49

Ratio of Nurses to Beds, Population and Students in 1953.

Serial No.	Name of the State	Nurses Beds	Nurses Populations	Nurses Students
1	Madras	1 : 4·3	1 : 10,000	1 : 2·5
2	Bombay	1:5·3	1:7 300	1: 2
3	Uttar Pradesh	1: 10	1 : 47,854	1 : 2·5
4	Bihar	1 : 15	1 : 61,791	2 : 1
5	Madhya Pradesh	1 : 7·3	1 : 27,500	1 : 33
6	West Bengal	1 : 5·2	1 : 3,615	1 : 3·5
7	Punjab	1 : 46·7	1 : 66,877	1 : 2
8	Assam	1 : 10	1 : 18,594	1 : 2·5
9	Orissa	1 : 21·7	1 : 1,09,300	1: 0·4
10	Rajasthan	1 : 6	1 : 17,616	1 : 1
11	Mysore	1 : 12	1 : 17,636	2 : 1
12	Madhya Bharat	1 : 9·4	1 : 20,000	1 : 2
13	Jammu and Kashmir	..	..	..
14	Travancore-Cochin	1 : 15	1 : 10,000	1 : 2
15	Hyderabad	1 : 11·5	1 : 47,225	1· 3
16	Saurashtra	1 : 11	1 : 15,500	1 : 5
17	Pepsu	1 : 9	1 : 17,500	1 : 2
18	Vindhya Pradesh	..	..	..
19	Himachal Pradesh	1 : 21	1 : 32,988	1 : 3
20	Bhopal	1 : 22	1 : 23,[illegible]31	1 : 2
21	Delhi	1 : 7	1 : 11 1[illegible]7	1 : 2
22	Coorg	1 : 10	1 : 4 5[illegible]8	1 : 0
23	Ajmer	.	.	..
24	Bilaspur	1 : 10	1 : 6[illegible]000	..
25	Kutch	1 : 21	1 : 63,000	..
26	Manipur	1 : 14·6	1 : [illegible]6 3[illegible]6	.
27	Tripura	1 : 11	1 : [illegible]00	1 : 2
28	Andaman & Nicobars	1 : 8	1 : 730	..
29	Andhra	1 : 13	.	1 : 2

Table 47

(*a*) Number of nurses sent abroad for various post-graduate courses on scholarships during the year 1953.

Sponsoring Authority	Number of nurses sent abroad	Source of scholarship	Country of training
Government of Madras	1	W.H.O. .	U.K.
Government of West Bengal . . .	1	T.C.M. .	U.S.A.
Government of Travancore-Cochin . .	1	T.C.M. .	U.S.A.
Christian Medical College, Vellore . .	2	T.C.M. .	U.S.A.
Lady Health Medical College Hospital, New Delhi	1	Colombo Plan	Canada
Government of West Bengal . . .	1	Colombo Plan .	Canada
Government of Hyderabad-Dn. . .	1	Colombo Plan .	Canada.

(*b*) 19 nurses returned to India after completing their training abroad, and all of them were employed in the different States.

Table 48

Number of students admitted and qualified in the B Sc. course in Nursing, and the Post-certificate course in Nursing during the year 1953.

The course of study	Number of admitted	Number of passed
B. Sc course in Nursing	34	19
Post-certificate Course in Teaching and Nursing Administration .	49	42
Post-certificate Course in Public Health Nursing . . .	11	13*

*Including 2 from previous batch.

West Bengal	3	54	2	77	23	188	104	4	..	..	..
Hyderabad	3	18	..	..	..	18	..	13	..	..	31
Jammu & Kashmir	..	.	..	..	..	..	..	..	..	..	..
Madhya Bharat	..	..	..	11	..	18	..	..	..	..	
Mysore	..	58	..	..	..	57	..	..	15	..	
P.E.P.S.U.	..	..	..	..	4	..	..	..	..	4	16
Rajasthan	7	17	..	3	1	9	..	..	6	11	..
Saurashtra	..	19	..	..	..	22	..	..	2	4	12
Travancore-Cochin	..	29	..	..	..	..	..	..	..	..	..
Aimer	..	..	..	..	..	..	..	..	..	..	..
Bhopal	..	3	..	..	..	6	..	..	..	..	29
Bilaspur	..	..	..	..	..	..	..	..	..	..	..
Coorg	..	..	..	..	..	7	..	..	..	..	..
Delhi	..	38	..	19	..	41	..	13	..	..	10
Himachal Pradesh	..	2	..	..	..	..	..	..	..	..	7
Kutch	..	..	..	..	..	..	..	..	..	..	..
Manipur	..	..	..	..	..	13	..	..	..	..	..
Tripura	..	..	..	..	..	..		..	..	..	..
Vindhya Pradesh	..	..	..	..	..	..	..	..	..	..	..
Andaman & Nicobar Islands	..	..	..	..	..	..	..	..	..	..	..
	185	874	336	185	48	1326	139	69	40	119	795